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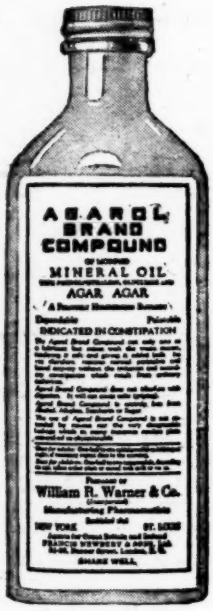


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# THE SURGICAL TREATMENT OF PARALYSIS OF THE VOCAL CORD AND OF PARALYSIS OF THE DIAPHRAGM.*

BY

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(*With Special Plate.*)

## I.—THE VOCAL CORDS.

EXPERIMENTS performed on the monkey and the dog show that end-to-end, or end-to-side, anastomosis of the recurrent laryngeal nerve to the phrenic nerve is successful in restoring, after a certain lapse of time, movements of abduction and adduction of the vocal cord comparable to those of the opposite or normally moving cord. After section of the recurrent laryngeal nerve the vocal cord assumes a typical cadaveric position and the inner border is concave and flaccid. After six or eight weeks from the date of the operation the inner border of the immobile cord becomes straight and tense. There is, in fact, a tension about the previously paralysed cord which had not been present before. Four months after the first experiment of recurrent laryngeal-phrenic end-to-end anastomosis was carried out both vocal cords were moving equally in tranquil respiration. Six months after the experiment was done the previously paralysed cord moved more strongly than the other, and seven months after the experiment there was excessive, almost violent, movement as compared with the vocal cord on the normal side. This result was hardly a surprise, because the nerve current required to cause contraction of one half of the muscle of the diaphragm must be considerably stronger than that required to energize the small intrinsic muscles of the larynx.

The best method of anastomosis of the recurrent laryngeal nerve to the phrenic nerve so as to obtain recovery of movement of the paralysed vocal cord in rhythm with the movement of the normal cord remains to be determined.

In certain experiments in the monkey the root of the phrenic nerve from the third cervical nerve, or the root of the phrenic nerve from the fourth cervical nerve, was united side-to-end to the recurrent laryngeal nerve; and in others the root was divided and united end-to-end to the divided recurrent laryngeal nerve. In other experiments the divided recurrent laryngeal nerve was united end-to-end to the proximal segment of the divided main trunk of the phrenic nerve; and in yet others the end of the divided recurrent laryngeal nerve was anastomosed end-to-side to a small lateral incision made in the side of the main trunk of the phrenic nerve.

In some cases the end-to-side anastomosis of the recurrent laryngeal nerve to a root of the phrenic nerve or to the main trunk of the phrenic nerve was effected by making a small longitudinal median incision into the part of the phrenic nerve selected for the site of anastomosis and attaching the cut end of the recurrent laryngeal nerve to it. The end-to-side operation is the operation of choice—that is, if there is sufficient length of the recurrent laryngeal nerve to bring across the carotid sheath to the side of the phrenic nerve without tension on the anastomosis. If, however, the available length of the recurrent laryngeal nerve is insufficient to reach the phrenic nerve, then the phrenic nerve must be divided and the proximal end brought across to meet the divided distal end of the recurrent laryngeal nerve. The actual method of anastomosis, whether by lateral incision or longitudinal median incision, did not seem to affect the final result. We believe, however, that the plan of lateral incision is the plan to adopt when end-to-side anastomosis is performed, as there is a definite and immediate approximation of divided nerve fibres. In such cases a partial or complete paralysis of one half of the diaphragm follows, but in a few weeks the paralysis passes away.

In man, therefore, the operation of choice is recurrent laryngeal-phrenic anastomosis, end-to-side, the lateral incision of the main trunk of the phrenic being carried out in order to obtain a raw surface of cut nerve fibres to which the distal end of the cut recurrent laryngeal nerve is attached.

This decision is based not only on the recurrent laryngeal-phrenic nerve anastomosis experiments, but on the results of a large number of experiments in which the two ends of a divided nerve were implanted at varying distances apart into the side of, or into median incisions in, a neighbouring nerve. These experiments have been reported,[1] and they seem to prove that the lateral incision method leads to more rapid and satisfactory recovery of the muscles supplied by the divided nerve than when its two ends are implanted into median longitudinal incisions made in the neighbouring nerve.

There is also no advantage in attaching the recurrent laryngeal nerve to one of the roots of the phrenic. When the root is divided and its proximal end sutured end-to-end to the recurrent laryngeal nerve the distal end of the root has sometimes been left without being joined to another nerve, and sometimes it has been joined end-to-end to the divided proximal end of the descendens noni nerve. In either case, even when the vocal cord muscles function again, there seems to be some delay in the recovery of normal contractions of the whole muscle of the diaphragm. It is curious to note that the quickest return of function of the vocal cord follows end-to-end anastomosis of the recurrent laryngeal to the proximal cut end of the main trunk of the phrenic nerve, and the most rapid recovery of the whole diaphragmatic muscle has followed end-to-end anastomosis of the distal cut end of the phrenic nerve to the proximal cut end of the descendens noni nerve. This latter result is in itself surprising, as we have not been able to obtain return of movement in the vocal cords during tranquil respiration by means of descendens noni-recurrent laryngeal end-to-end anastomosis. We do not suggest any explanation of this experimental finding.

There is another point about end-to-side recurrent laryngeal-phrenic anastomosis. In some cases there seems to be delay or arrest in the complete recovery of the movements of the vocal cord, or there may be delay in the complete recovery of the diaphragm, or there may be delay in the complete recovery of both vocal cord and diaphragm. The cause of these variations would seem to be that the nervous energy travelling through the phrenic nerve is overtaxed. While before the operation the nerve current of the phrenic nerve had to cause only contraction of one half of the diaphragm, after the operation it has now also to excite contraction in the intrinsic muscles of the larynx. In all departments of life the pursuit of two objectives may delay or hamper complete success in either or both of them. Napoleon wrote to his vacillating Admiral Villeneuve, "It seems to me your purpose is *not exclusive enough* for a great operation. You must correct this fault, for that is the art of great successes and of great operations." This famous maxim is true not only of the great operations of war but also of those of surgery.

Nevertheless the success which has followed the end-to-side anastomosis experiments makes it clear that this is the best operation to perform. (Fig. 19.) The experiments in which more than one anastomosis was carried out are less likely (except in special circumstances, as when there is only a short piece of the recurrent laryngeal nerve available) to find a permanent place in surgical practice. The best recommendation of recurrent laryngeal-phrenic end-to-side anastomosis is that it is a simple procedure and is frequently followed by the best functional results.

The number of experimental anastomoses of the recurrent laryngeal nerve to other nerves done is 33: 6 anastomoses to the vagus nerve end-to-side, 7 anastomoses to the descendens noni nerve end-to-end, and 20 anastomoses to a root or the main trunk of the phrenic nerve. The end-to-end anastomosis with the main trunk of the phrenic nerve

[3455]

* The experiments mentioned in this paper were carried out at the National Research Institute, Hampstead. The Medical Research Council paid the expenses and gave me every assistance. I am greatly indebted to Dr. Dale.—C.B.

The microscopical sections have been cut and stained by Mr. Steward at the Royal College of Surgeons by the kind permission of Sir Arthur Keith.

produced an unnaturally wide abduction movement of the cord, while the end-to-side anastomosis to the phrenic nerve was followed by an abduction movement comparable to that of the opposite or normal cord in tranquil respiration.

The attachment of the divided end of the recurrent laryngeal nerve to a root of the phrenic nerve instead of to the main trunk does not appear to present any advantage. When one root of the phrenic nerve was divided a portion of the corresponding half of the diaphragm was paralysed, but in one experiment there was complete recovery from this after some months, following the attachment of the proximal end of the divided descendens noni nerve to the distal end of the root of the phrenic nerve. It will be seen in the second part of this paper that paralysis of one half of the diaphragm is under the control of the surgeon and that this paralysis need no longer be of serious concern to the operator.

In the hussar monkey the microscope shows that the root of the phrenic from the third cervical nerve is composed of many fine presumably motor fibres and some large fibres, while the root from the fourth nerve contains many large as well as small fibres. A large number of microscopic sections of the nerves of the neck of man and the monkey have been examined, and large and small nerve fibres in varying proportion have been seen in all the nerves. (Figs. 1 to 4.) In the microscopic sections of the superior laryngeal nerve and of its internal and external branches there appears to be a marked difference in size between the nerve fibres (sensory) of the internal branch and the nerve fibres (motor) of the external branch. It has not been possible, however, to follow this distinction with any certainty in the case of the other nerves. All so-called motor nerves contain large nerve fibres, but whether these are motor or sensory it is not possible to tell.

## DESCRIPTION OF SPECIAL PLATE.

(FIGS. 1 TO 4.)

FIG. 1.—Transverse section of the phrenic nerve of the hussar monkey. (× 50.) The large nerve bundle comes from the fourth cervical nerve. The next largest bundle comes from the third cervical nerve. The smallest nerve is presumably the root from the fifth cervical nerve, but this root was not seen during the dissection. The nerve bundle arising from the fourth cervical nerve contains much larger fibres than the nerve bundle from the third cervical nerve. This difference in the size of the nerve fibres may indicate some difference in function.

In man the roots of the third and fourth cervical nerves can be seen to join a little below the point where the root from the fourth cervical nerve is given off. They are enclosed in one sheath beneath the fascia of the scalenus anticus muscle, but can be seen to continue as separate nerves on the way down the neck. So clearly separate are the two roots of the phrenic that a lateralized tenotomy knife can be passed between them and either nerve can be divided without injury to the other. This anatomical fact was taken advantage of in the experiment on a hussar monkey in which the separation of the two roots was observed. In this monkey the root from the fourth cervical nerve was divided with a tenotomy knife as described and united end-to-end with the divided recurrent laryngeal nerve. The difference in size of the nerve fibres of the different roots as observed in the hussar monkey is not seen in the phrenic of man.

FIG. 2.—Transverse section of the superior laryngeal nerve in a man aged 40. (× 30.) The main trunk is divided into one large bundle of fibres and four smaller ones. The fibres of the large bundle are much larger than those of the small bundles.

FIG. 3.—Transverse section of the internal branch of the superior laryngeal nerve. (× 30.) The drawing shows three bundles of fibres. The fibres in the large bundle are all of comparatively large size. It would appear that in the superior laryngeal nerve the large fibres are sensory and the smaller ones motor in function.

FIG. 4.—Transverse section of the external branch of the superior laryngeal nerve. (× 50.) The drawing shows four bundles of fibres. The fibres are small except a few large ones scattered among the masses of small fibres.

The operation of recurrent laryngeal-phrenic anastomosis end-to-side (by lateral incision of the main trunk of the phrenic nerve) has been performed by one of us in the case of a woman, aged 54, who eight months before the anastomosis operations suffered from paralysis of both vocal cords following an operation for removal of a thyroid tumour. Five months after the anastomosis operation on the right side and four months after the anastomosis operation on the left side were carried out both cords of the patient were showing slight abduction excursions in tranquil respiration, and the paralysis of both halves of the diaphragm had completely disappeared.

Experiments had been performed before the recurrent laryngeal-phrenic anastomosis was attempted. In these the vagus nerve and the descendens noni nerve were united to the divided recurrent laryngeal nerve. In the end-to-side recurrent laryngeal-vagus anastomoses and the end-to-end recurrent laryngeal-descendens noni experiments, the vocal cord in each case recovered its tension, and its inner border became straight, but no movement of abduction was observed in tranquil respiration some eighteen months after the operation. This movement, however, was obtained by partially asphyxiating the animal while it was under ether by pressure on the trachea. The inspiratory effort on releasing the pressure on the trachea became so powerful that the muscles of the immobile vocal cord recovered sufficient nervous energy to contract. In one case, four and a half months after descendens noni-recurrent laryngeal anastomosis, the monkey was placed under ether and pressure was made on the trachea. This induced strong adduction of both vocal cords. As soon as the pressure which had induced partial asphyxia was relaxed, wide outward excursions of both vocal cords, equal on the two sides, were observed and continued for two or three minutes. The excursions of the previously immobile cord gradually diminished in extent as the asphyxia passed off, and then ceased.

This experiment (originally suggested by Professor Starling) possibly gives the key to the problem of re-education in man of the paralysed vocal cord after anastomosing the recurrent laryngeal nerve to the phrenic nerve. "Holding the breath" is necessarily followed in man by a strong inspiratory effort, which would probably cause in man, as in the monkey experiment, abduction of the previously immobile vocal cord, so that a patient's immobile or slightly moving cord might at last be re-educated to act in an harmonious subconscious normal respiratory movement with the vocal cord of the opposite or healthy side.

This method of re-education—"holding the breath"—is being employed in the case of the woman mentioned above, and in addition a galvanic current has been passed across the larynx for ten minutes once or twice a day since the operation, in the hope that it would influence the recovery of the intrinsic muscles of the larynx and perhaps prevent the scar tissue of the operations from causing undue pressure on the nerves and the anastomoses.

That a nervous impulse could pass through the anastomoses made between the recurrent laryngeal nerve and the vagus and descendens noni nerves was clear from the following experiments.

1. Fifty days after a descendens noni-recurrent laryngeal anastomosis was done in a monkey the wound was opened and the anastomosis exposed. On stimulating (1) the hypoglossal nerve proximal to the origin of the descendens noni nerve, (2) the descendens noni, (3) the site of the anastomosis, the vocal cord was seen to abduct.

2. Seven months after a recurrent laryngeal-vagus anastomosis was done in a monkey the wound was opened. The vagus was stimulated (1) proximal to the anastomosis, and (2) at the site of anastomosis. The vocal cord was seen to abduct.

These stimulations caused abduction of the previously immobile cord; the excursions of the cord were not so wide as on the opposite or healthy side. Later (when perhaps the abductor was tired) strong adduction was observed.

The recognition of the certainty of recovery of the movements of the vocal cord which follows recurrent laryngeal-phrenic anastomosis made us abandon the operation of uniting the recurrent laryngeal nerve with either the descendens noni nerve or the vagus nerves. The object in view is not merely to obtain a return of tone in the cord, however desirable this may be, but to win by means of operation a recovery of the movements of adduction and abduction equal and synchronous with the movements of the opposite or normal cord.

From the experience gained from the monkey experiments it is not possible to state at what period after the experimental operations movement of the recovering cord first occurs. The animals have to be kept for nerve anastomosis experiments to mature for long periods of time. They are valuable and scarce, and an anaesthetic is dangerous.

COLLEDGE AND BALLANCE: SURGICAL TREATMENT OF PARALYSIS OF THE VOCAL CORD AND OF THE DIAPHRAGM

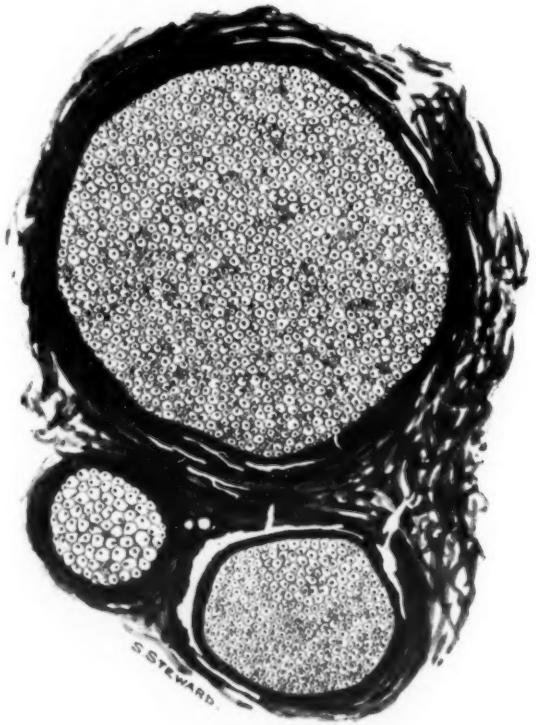



FIG 1.

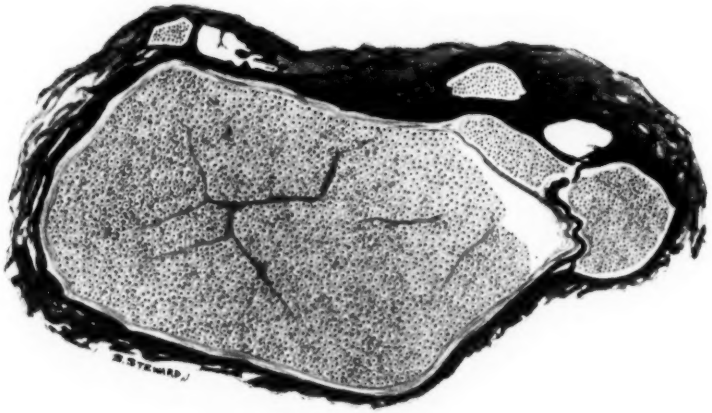
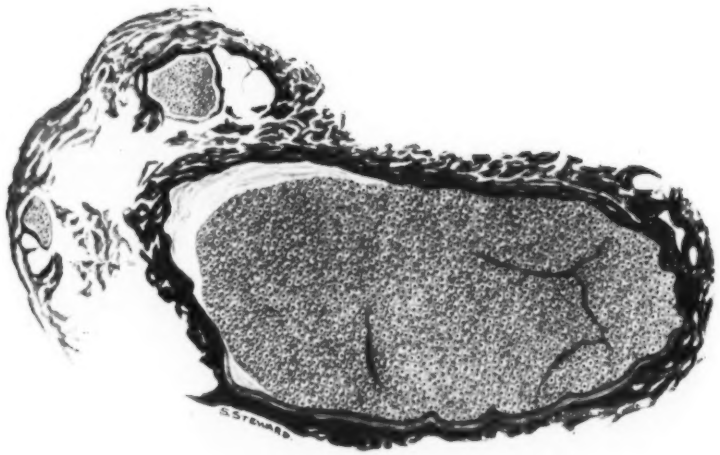



FIG. 2.

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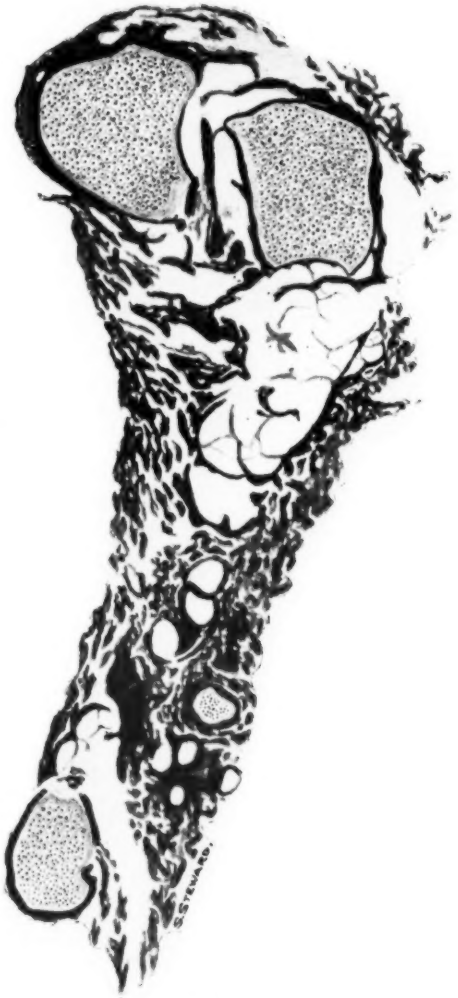
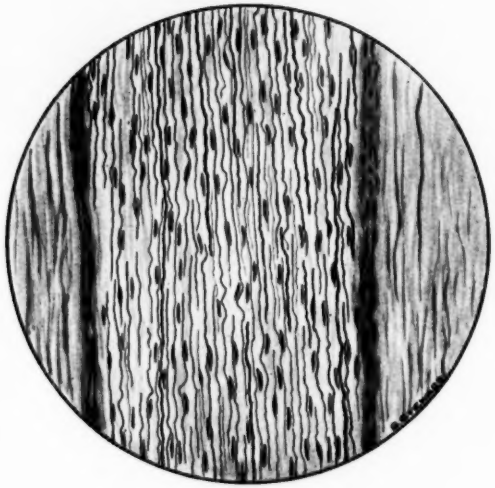



FIG. 4.



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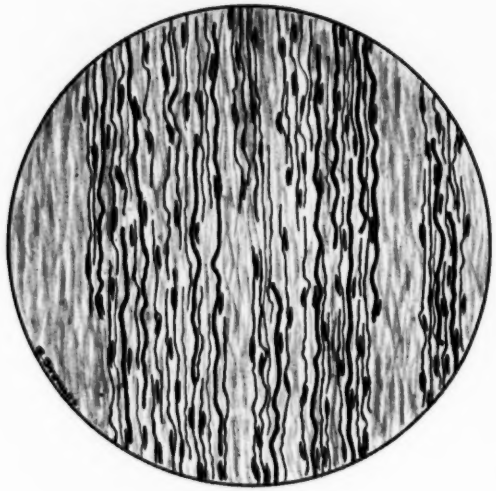

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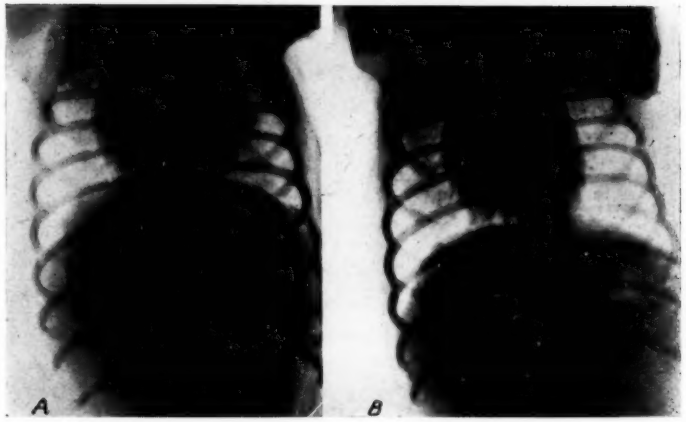


FIG. 7.

FIG. 8.—Adduction.

FIG. 9.—Abduction.

FIG. 10.—Adduction.

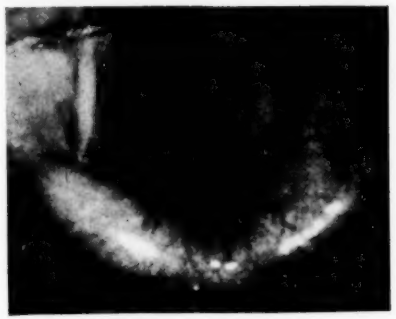

FIG. 11.—Abduction.

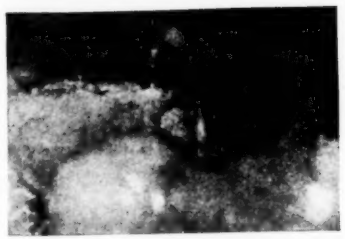

FIG. 12.—Adduction.

FIG. 13.—Abduction.

In man, however, when these operations become performed generally it will be possible to note week by week, by the aid of the laryngoscope, the slow but certain stages of recovery of movement of the vocal cord. It appears from the experiments, however, that the movement of adduction reappears earlier than that of abduction, and this corresponds with the familiar clinical experience that the abductors of the cords are more vulnerable than the adductors. The adductors, too, correspond to the flexor muscles of the limbs, and it is a common experience that after a nerve lesion of a limb the flexor muscles recover before the extensors. Negus points out that in evolution "adduction is an older function than abduction; therefore the power of the former survives that of the latter."

In disease, and possibly in injury, one intrinsic muscle of the larynx may atrophy though its nervous supply is intact, while the other intrinsics are acting normally. Hughlings Jackson and Morell Mackenzie published a case in 1866.[2] The abductor muscles were found greatly atrophied after death, while the nerve structures were intact. It would appear also that bilateral paralysis of the abductor muscles may arise from disease of the nerve fibres distributed to these muscles without paralysis of the other intrinsic muscles of the larynx.[3] In our experiments when perfect functional recovery is not present these facts should be remembered. It may be that some intrinsic muscle or some nerve filaments have not regenerated so well as others. This demonstrates the necessity, at a later stage of the experiments, for the careful study of microscopical sections of each intrinsic muscle and of its motor nerve fibres.

In the experiments the recurrent laryngeal nerve has always been completely divided, and as a result the vocal cord occupies the cadaveric position; but in cases of abductor paralysis in man the paralysed cord lies nearer to the mid-line than the cadaveric position because of tonic contraction of the adductor muscles.

Another question also requires an answer: When the vocal cord is moving normally through nervous impulses conveyed to it through the phrenic nerve, will the patient be able to phonate? This is the question asked by the late Sir Frederick Mott. The answer can hardly be decided by experiments on the monkey; operation on man will give the reply. This is the decisive experiment. Sir Frederick Mott pointed out that the lemur monkey of the forests of Sumatra possessed a highly developed larynx, and that these animals were said to sing in chorus in their native wilds. He suggested that one of these monkeys should be obtained, as it would be very important to know whether, after a recurrent laryngeal-phrenic anastomosis had been performed, the singing voice would return or be modified; but it has not been possible to obtain a lemur monkey.

The recovery of the movement of the vocal cords after recurrent laryngeal-phrenic anastomosis has been filmed, and the appearances are described in another part of the paper.

It is not possible to say how long after paralysis of the vocal cord has taken place it would be justifiable to attempt to restore the movement of the cord by surgical operation.

## DESCRIPTION OF SPECIAL PLATE.

(FIGS. 5 TO 13.)

FIG. 5.—Microscopic appearance of phrenic nerve of a baboon distal to a descendens noni-phrenic anastomosis eighteen months after the performance of the anastomosis. (× 150.) Cajal stain.

FIG. 6.—Microscopical appearance of recurrent laryngeal nerve of a baboon distal to a recurrent laryngeal-phrenic anastomosis eighteen months after the performance of the anastomosis. (× 150.) Cajal stain. The recurrent laryngeal nerve had been divided in the lower part of the neck six months before the anastomosis operation was done.

FIG. 7.—Dog. Photographs by Mr. Melville of the position of the diaphragm at the end of expiration and at the end of inspiration (Experiment I). A, End of expiration. B, End of inspiration. Twenty seconds elapsed between the two exposures. Each exposure lasted an eighth of a second. Both halves of the diaphragm are contracting through nerve currents passing through the descendens noni-phrenic anastomosis.

FIGS. 8 AND 9.—Dog under ether anaesthesia (Experiment I). Rapid respiration described by Richet by the name "polypnoea." Stated by Semon and Horsley as occurring when the lower third of the cortex of the precrucial gyrus is stimulated. The rapid respiration is frequently observed during ether anaesthesia in this animal and is relieved by the administration of a little chloroform. Note the wider space between the arytenoid cartilages in abduction. The film was taken fifteen months after a recurrent laryngeal-phrenic end-to-end anastomosis was performed on the right side, and ten months after the recurrent laryngeal-phrenic end-to-end anastomosis was done on the left side. In this case the main trunk of the phrenic was used for the end-to-end anastomosis on the left side, while on the right side the end-to-end anastomosis was made to the proximal segment of the root of the phrenic arising from the sixth cervical nerve. (See also Figs. 14 and 15.)

FIGS. 10 AND 11.—Large rhesus monkey; tranquil respiration (Experiment II). Note the wide angle formed by the two sides of the arytenoids in abduction and the lesser angle in adduction. These photographs do not give the same effect as seen in the film. For example, in the film much more adduction is visible; the channel between the vocal cord approximates to a slit-like opening. The film was taken two years and six months after the operation of recurrent laryngeal-phrenic end-to-side anastomosis was performed on the right side, and thirteen months after the operation of recurrent laryngeal-phrenic anastomosis end-to-end was done on the left side. Note the wider abduction movement of the vocal cord on the left side. (See also Figs. 16 and 17.)

FIG. 12.—Same monkey. Strong adduction during partial asphyxiation. The cords have nearly passed off the field.

FIG. 13.—Same monkey. Wide abduction following immediately after pressure on trachea was relaxed.

The surgical treatment of paralysis of the face may be attempted as long as contraction of the muscles of the face, however feeble—if necessary under an anaesthetic—can be obtained by stimulation through the skin with the galvanic current. It does not appear whether this method has been employed in the case of the intrinsic muscles of the larynx, but an electrode might be introduced into the larynx through the laryngoscope and a galvanic current used in order to find out whether any movement of the paralysed vocal cord can be induced. Frazier and Chevalier Jackson have advised that mobility of the crico-arytenoid joint should be tested with a long probe, lest the cartilages have become fixed either from arthritis or from secondary changes in the joint following prolonged paralysis and interference with its nerve supply.

There is another point of contrast also: in paralysis of the face some treatment, perhaps intermittent, such as massage and galvanism, has almost always been adopted to maintain the nutrition of the muscular fibres; so that, years after a complete palsy of the face has occurred, nerve anastomosis may be followed by a wonderful recovery of the facial muscles. The fact that, in the case of the patient previously quoted, eight months elapsed between the injury to the recurrent laryngeal nerves and the anastomosing nerve operations, and that already there is promise of a successful result, is a hopeful augury for the performance of the operation when the paralysis has continued for a much longer period than eight months.

Two experiments have been performed in which the recurrent laryngeal nerve was divided three months and six months before it was united to the phrenic nerve, but the specimens from these cases are not yet ready for publication. (Figs. 5 and 6.)

Altogether twenty experiments have been performed in which the recurrent laryngeal nerve has been anastomosed in various ways to a root of the phrenic nerve or to the main trunk of the phrenic nerve, and the results leave no question in the mind as to the success of the operation. When both recurrent laryngeal nerves have been anastomosed to the corresponding phrenic nerves the result is not always at first satisfactory. In a large rhesus monkey in which the operations on the two sides of the neck were separated by a long interval of time no stridor and no difficulty of breathing occurred; but in two baboons and two dogs it was noticed that while in tranquil respiration there was no stridor, yet when these animals became excited noisy respiration occurred. In these baboons and dogs it must be noted that the central nervous connexion of both recurrent laryngeal nerves and both phrenic nerves had been disturbed—the recurrent laryngeal nerves being united to the proximal part of the divided phrenic nerves and the distal part of the phrenic nerves to the divided proximal parts of the descendens noni nerves. Further, the depressor muscles of the larynx in the baboons were paralysed for a time, the distal segment of the descendens noni nerve on each side of the neck being united end-to-side to the lower border of the hypoglossal nerve, and in some other cases to the side of the phrenic nerve proximal to the recurrent

laryngeal-phrenic end-to-end anastomosis. It is true that operations on the two sides of the neck were separated by a considerable length of time, but now, when both cords were moving, when both halves of the diaphragm had recovered from paralysis, and when the muscles on both sides of the neck were again working normally, why is it that noisy respiration on excitement occurs? It must be remembered that the muscles innervated by the recurrent laryngeal, phrenic, and descendens noni nerves are intimately associated in the respiratory movements. The noisy respiration caused by the inco-ordination of muscular movement does not appear surprising, since complicated nerve arrangements must be made in the central nervous system before the nerve cells of the central connexions of the phrenic and descendens noni nerves are brought into nervous union with those nerve cells which control under normal circumstances the rhythmical respiratory movements of the vocal cords and each half of the diaphragm. Time alone offers the probability or possibility of complete recovery.

The end-to-side and end-to-end anastomoses of the distal end of the divided recurrent laryngeal nerve to the main trunk of the phrenic nerve on one side of the neck have been invariably successful, in that they are followed by apparently normal movements of the corresponding vocal cord; but when such an operation has been carried out on both sides of the neck, the movements of the vocal cords, thus energized through union with the corresponding phrenic nerves, have shown in a few instances an inco-ordination or false timing of the movements of the vocal cords, indicating that though the respiratory centre is working yet it has not regained normal control. This paradoxical result affects the vocal cord on the side which was first operated on, though previous to the second operation this vocal cord was moving equally and synchronously with the opposite or normally moving vocal cord.

There are other points to consider. The end-to-end suture of the extremely fine nerves in the monkey is not in all cases carried out so perfectly as is desirable; and again, the presence of scar tissue at the site of anastomosis may possibly delay or weaken the passage of a nervous impulse. These, no doubt, are theoretical considerations, but the fact remains that when both recurrent laryngeal nerves have been anastomosed end-to-end to the corresponding phrenic nerves a paradoxical movement of the vocal cords has been seen, adduction occurring in inspiration and abduction in expiration.

Inco-ordination is also seen in emotional movement, such as laughing, after a nerve anastomosis has been performed for facial palsy. The distortion of the face may be so great that, superficially observed, it appears that no recovery has taken place; but if and when by re-education both sides of the face work together the distortion on emotional movement does not occur. It may be that in the practical application of the operation for double abductor paralysis the difficulty of inco-ordination may be avoided or minimized by performing the operation on one side only, leaving the opposite cord without movement, since it is a commonplace observation that unilateral paralysis frequently causes neither dyspnoea nor lasting alteration in the voice.

In Blalock and Crowe's paper[4] admirable figures are given of regeneration of the recurrent laryngeal nerve distal to anastomosis with the descendens noni nerve and the vagus nerve. This regeneration we have found whatever cervical nerve has been anastomosed to the recurrent laryngeal nerve. In our experiments in no instance could the recovery of the movements of the vocal cord be compared to that obtained by anastomosis of the recurrent laryngeal nerve to the phrenic nerve. In our experiments, too, monkeys were chiefly used, and in Blalock and Crowe's dogs only. We think the experiments with the monkey give results which are of more service for comparison when the time arrives for their application to the surgery of man. Blalock and Crowe recommend the selection of the descendens noni nerve or the upper root of the phrenic. They say that the best results are obtained by making the anastomosis close to the larynx, as the axis cylinders have a shorter distance to traverse before reaching the end-organs in the intrinsic laryngeal muscles; but this is a theoretical statement, and represents a theory of nerve regeneration which is not universally accepted (see *Healing of Nerves*, Ballance and Stewart).

Blalock and Crowe state that the entire severance of the phrenic or vagus involves a needless risk. No one has suggested the entire severance of the vagus, and in man we only recommend the division of the trunk of the phrenic when there is not a sufficient length of recurrent laryngeal nerve to bring across the carotid sheath in order to carry out an end-to-side anastomosis. We do not believe in risk associated with division of the phrenic on one side (it is often destroyed at the present time in the treatment of some forms of phthisis and bronchiectasis), and we know that the anastomosis of the proximal end of the divided descendens noni nerve to the distal cut end of the phrenic will eventually result in complete recovery from paralysis of the diaphragm. We have employed end-to-end and end-to-side anastomosis of the recurrent laryngeal nerve to the upper and middle phrenic roots, but we are convinced that end-to-side anastomosis of the recurrent laryngeal to the trunk of the phrenic is the operation of choice. Further, our experiments teach us that operation on one of the phrenic roots does cause a partial paralysis of the diaphragm. We agree, however, with these authors that light ether anaesthesia is of great importance in observing the movements of the vocal cords; deep anaesthesia or morphine may abolish the movements and lead to wrong conclusions. This point was insisted on also by Semon and Horsley.

### DESCRIPTIONS OF EXPERIMENTS.

In each experiment before the sutures were passed to bring the cut ends of the several nerves together the recurrent laryngeal and phrenic nerves were stimulated with the faradic current. The contraction of one half of the diaphragm was easily observed, and so was the movement of the corresponding vocal cord, by means of the laryngoscope. It was noted, too, that the contraction of the muscle of one half of the diaphragm was sometimes associated with contraction of the lower intercostal muscles. These latter muscles being associated in normal respiratory action with the muscle of the diaphragm seem to have received a reflex hint to carry on as normal.

It has been already said that twenty experiments in which the recurrent laryngeal nerve was united to the phrenic nerve have been performed. When both recurrent laryngeal nerves were anastomosed to the corresponding phrenic nerves the two operations were counted in the above list as two experiments. In the following description of certain of these experiments when two operations have been done on the same animal it has been found more convenient to reckon such a procedure not as two experiments but as one.

#### EXPERIMENT I.—*Dog.*

This animal was constantly barking, which was a fact of value in relation to the nature of the experiment proposed to be performed. The dog was deeply anaesthetized with ether, but unfortunately just before the film was about to be taken the respiration became very rapid, shallow, and panting. The film therefore shows much smaller excursions of the cords than have been observed to take place when the respiration is quiet and natural. The right cord, however, will be seen to have a wider abduction movement than the left, and this is probably due to the fact that the operation on the right side of the neck was performed five months before that on the left side. The film was taken fifteen months after the operation was done on the right side of the neck and ten months after the operation was done on the left side of the neck. (See Figs. 8 and 9.)

*First Operation* (*Right Side*).—Recurrent laryngeal nerve to the proximal segment of the root of the phrenic derived from the sixth cervical nerve—anastomosis end-to-end. Descendens noni nerve to the distal segment of the root of the phrenic derived from the sixth cervical nerve—anastomosis end-to-end. (Fig. 14.)

In this case it will be seen that the root of the phrenic from the sixth cervical nerve was used for the anastomoses and not the main trunk of the nerve.

The animal began barking again vigorously three months after the operation, and five months after the operation the right cord was moving synchronously and equally with the normal cord on the left side.

It was decided to do a similar operation on the left side.

*Second Operation* (*Left Side*).—Recurrent laryngeal-phrenic (main trunk) anastomosis, end-to-end. Descendens noni-phrenic (main trunk) anastomosis, end-to-end. (Fig. 15.)

Thus on the left side of the neck a different operation was done from that carried out on the right side of the neck. The recurrent laryngeal nerve and the main trunk of the phrenic nerve were divided and the proximal end of the divided phrenic was united end-to-end with the distal cut end of the divided recurrent laryngeal nerve. The descendens noni nerve was divided in the operation on the right and left sides of the neck, below the

origin of the branches to the omo-hyoid, sterno-hyoid, and sterno-thyroid muscles, and its proximal end united to the distal end of the divided root or main trunk of the phrenic nerve.

Six months after the operation on the left side of the neck the dog was barking again loudly, but perhaps the bark was not exactly the same as before the operations; the movements of both cords were equal and synchronous.

*Examination of the State of the Diaphragm (at University College).*—A film of the contractions of the diaphragm cannot at present be taken, but Mr. Melville hopes that before long this may be possible. Professor Elliot Smith's report is as follows:

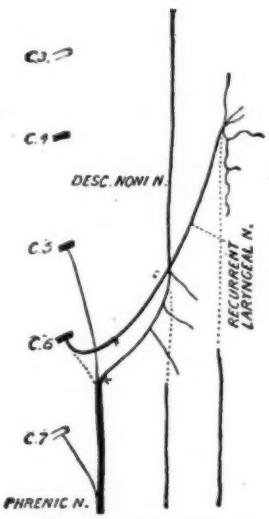


FIG. 14.—Dog (Experiment I). Recurrent laryngeal-phrenic (root from sixth cervical nerve) end-to-end anastomosis. Descendens noni-phrenic (distal end of divided root from sixth cervical nerve) end-to-end anastomosis.

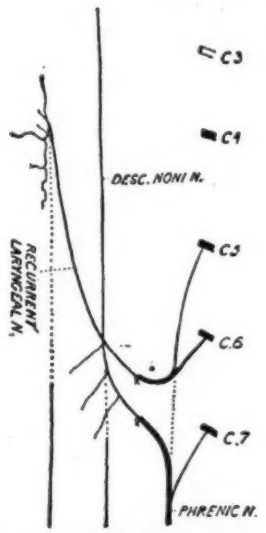


FIG. 15.—Dog (Experiment I). Recurrent laryngeal-phrenic (main trunk) end-to-end anastomosis. Descendens noni-phrenic end-to-end anastomosis.

The first examination was made with the radiographic screen ten months after the operation was done on the right side of the neck and five months after the operation was done on the left side of the neck.

*Report on the Right Side.*—The major part of the right half of the diaphragm is contracting normally, especially the posterior portion; but an area of the muscle is still paralysed.

*Report on the Left Side.*—Active contraction of all parts of the muscle.

Five months later another examination was made. The report stated that both halves of the diaphragm were actively contracting, and there was no sign of paralysis on the right side. (Fig. 7.)

Ten months after the second operation was done the vocal cords were moving equally and synchronously as seen through the laryngoscope. At this time the movements of the vocal cords were filmed. The film shows that the excursions of the right vocal cord were slightly more pronounced than those of the left vocal cord.

Some little time after the filming of the vocal cords it was noted that the dog was suffering from stridor and that the bark was very hoarse. The animal was not under constant observation as it was kept at the farm laboratories. It seemed that the stridor and hoarseness might be accounted for either by the prolonged anaesthesia necessary for the filming upsetting the respiratory rhythm, especially as multiple anastomoses had been done, or possibly that the extension of the neck during the filming had stretched or in some way damaged the anastomoses. The larynx of the dog was examined again, when, though the vocal cords were actively moving, adduction was seen to take place in inspiration and abduction in expiration. All observers note that the movements of the vocal cords are very sensitive to deep anaesthesia.

Three months after the filming of the vocal cords the dog was anaesthetized again, and killed with ether at the close of the examination.

There was still the paradoxical movement of the vocal cords as described above, but adduction was accompanied by movement of the larynx as a whole, caused by the subhyoid muscles, so that possibly the adduction may have been due to extrinsic influence and not caused simply by contraction of the intrinsic muscles.

The following experiments seem, however, to point to a different conclusion.

1. Stimulation of the undivided recurrent laryngeal nerve on the left side was followed by adduction of both vocal cords.

2. Stimulation of the distal end of the divided recurrent laryngeal nerve was followed by adduction of both vocal cords.

3. Stimulation of the proximal end of the divided nerve was followed by adduction of the opposite vocal cord.

The two last observations are paradoxical and contrary to what occurs in normal circumstances, so that the truth seems to be that the prolonged anaesthesia required for the filming of the vocal cords had interfered with their normal rhythm of movement.

The appropriate area of the cortex cerebri was stimulated, but no movement of the vocal cords was seen; when the cortical stimulation was done the animal had been under deep anaesthesia for some time.

EXPERIMENT II.—*Large Rhesus Monkey.*

*First Operation (Right Side).*—Recurrent laryngeal-phrenic anastomosis, end-to-side. The recurrent laryngeal nerve was divided and the distal cut end united, end-to-side, to a small median incision made in the main trunk of the phrenic nerve. (Fig. 16.)

Six months later the right cord was moving synchronously with the left.

*Second Operation (Left Side).*—Seventeen months after the operation on the right side the following operation was performed on the left side: Recurrent laryngeal-phrenic (main trunk) anastomosis, end-to-end. No anastomosis of distal end of phrenic to any other nerve. (Fig. 17.)

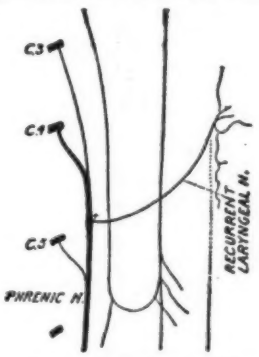


FIG. 16.—Rhesus monkey (Experiment II). Recurrent laryngeal-phrenic anastomosis, end-to-side. (Small median incision made in middle of phrenic trunk.)

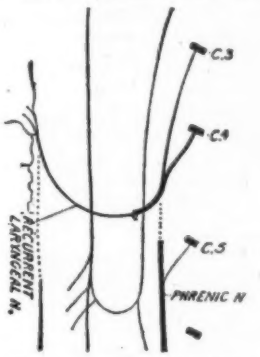


FIG. 17.—Rhesus monkey (Experiment II). Recurrent laryngeal-phrenic end-to-end anastomosis. No anastomosis of distal part of phrenic to any other nerve.

Six months later both cords were moving well, but the left cord (the recurrent laryngeal had been attached to the whole phrenic) showed a wider abduction excursion than the left.

*The Diaphragm.*—Examination at University College with the radiographic screen by Professo. Elliot Smith, Dr. Beattie, and Mr. Melville, two years and five months after the operation on the right side and twelve months after the operation on the left side. The report on the right side stated that all parts of the diaphragm were contracting equally and well. That on the left side was as follows: "No contraction of any part of left half of diaphragm; cupola moves passively upwards and downwards with respiration."

This monkey is still alive and well. It is three years since the recurrent laryngeal-phrenic anastomosis was done on the right side and one and a half years since the recurrent laryngeal-phrenic anastomosis was performed on the left side. This animal has never had any stridor. Both vocal cords are apparrently moving naturally. It is to be noted that, though the left half of the diaphragm is paralysed, the right half is contracting through nervous influences passing in the normal manner through the right phrenic nerve—a recurrent laryngeal-phrenic end-to-side anastomosis having been done. (Figs. 10 to 13.)

EXPERIMENT III.—*Baboon.*

*Operation (Right Side).*—Recurrent laryngeal-phrenic end-to-end anastomosis. Descendens noni (proximal end)-phrenic (distal end) end-to-end anastomosis. Descendens noni (distal end)-hypoglossal end-to-side anastomosis. (Fig. 18.)

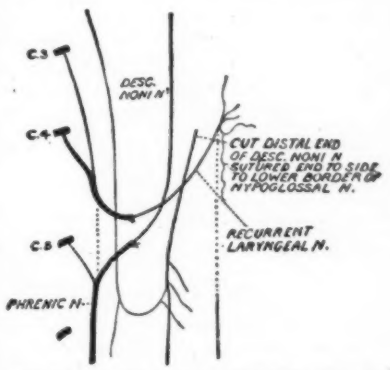
C3
DESC. NONI N.
C4
CUT DISTAL END OF DESC. NONI N. SUTURED END TO SIDE TO LOWER BORDER OF HYPOGLOSSAL N.
C5
RECURRENT LARYNGEAL N.
PHRENIC N.

FIG. 18.—Baboon (Experiment III). Recurrent laryngeal-phrenic end-to-end anastomosis. Descendens noni-phrenic end-to-end anastomosis. Descendens noni-hypoglossal end-to-side anastomosis.

A. *The Vocal Cords.*—Four months afterwards: Right vocal cord moves equally with left in tranquil respiration. Six months after operation: Right vocal cord moves more strongly than left. Seven months after operation: Right vocal cord moves excessively as compared with the movements of the left vocal cord; the movements of the cords are, however, synchronous. (Observed by Sir David Ferrier and the late Sir Frederick Mott.)

B. *The Diaphragm.*—Examination by Dr. Eidinow with the radiographic screen at the Hampstead Institute seven months after

the operation. The report stated that both halves of the diaphragm contracted equally and normally. (Professor Leonard Hill agreed with this report.)

*C. The Depressor Muscles of the Hyoid Bone and Larynx.*—Seven months after operation: The muscles on the right side of the neck react to the faradic current in a normal way and like those on the left side of the neck.

The baboon became ill two weeks later and was destroyed by ether inhalation.

### EXPERIMENT IV.—*Dog.*

*First Operation* (*Right Side*).—Recurrent laryngeal-phrenic (main trunk) end-to-end anastomosis. Descendens noni-phrenic (main trunk) end-to-end anastomosis.

Three months later the animal was running about in good health; there was no sign of difficulty in breathing.

Six months after the operation: Both cords move equally and synchronously. Perhaps there is not quite so much abduction of the right cord as there is of the left cord. The adduction movement of both cords is strong.

The wound was opened and the hypoglossal nerve proximal to the origin of the descendens noni nerve and the descendens noni nerve proximal to its anastomosis with the phrenic nerve were exposed and stimulated with the faradic current. Contraction of the right half of the diaphragm occurred and continued rather violently for a short time after the faradic stimulation ceased. Previous to this experiment no difference could be detected on inspection and palpation between the movements of the upper half of the right abdominal wall and ribs and the movement of the corresponding parts on the left side.

*Second Operation* (*Left Side*)—six months after operation on the right side.—Recurrent laryngeal (main trunk) -phrenic end-to-end anastomosis. Descendens noni-phrenic (main trunk) end-to-end anastomosis.

Nine months after the second operation: Some stridor had been noted for two or three months when the animal was excited.

*Vocal Cords.*—Both cords abduct, but the right moves more actively than the left. Adduction, which is a strong movement on both sides, takes place in inspiration and abduction in expiration.

*Diaphragm.*—Examination by Professor Elliot Smith at University College. The right side showed normal diaphragmatic contraction; all the muscle was acting. On the left side the movement appeared to be less in amplitude than that on the right. It seemed that some of the muscle fibres on the ventral surface were not yet active.

Two months after the examination at University College the animal was killed by the inhalation of chloroform. Before death took place both recurrent laryngeal nerves were exposed near the larynx and stimulated with the faradic current. Stimulation of the right recurrent laryngeal nerve with a moderate faradic current caused strong adduction of *both* cords. When the stimulation ceased the cords moved outwards, leaving a wide air space. Stimulation of the left recurrent laryngeal nerve gave the same result, but the movement on the right side was stronger than that on the left.

The paradoxical movement of the vocal cords is discussed in another part of the paper. In normal circumstances the stimulation of the intact recurrent laryngeal nerve is followed by an equal movement of both vocal cords. It is interesting that the same result obtained in this case, though each recurrent laryngeal nerve had been anastomosed to the corresponding phrenic nerve. Both halves of the diaphragm were contracting through nerve currents passing through the descendens noni-phrenic anastomoses, but the left muscle of the diaphragm had not completely recovered.

### EXPERIMENT V.—*Dog.*

*First Operation* (*Right Side*).—Recurrent laryngeal-phrenic (main trunk) end-to-end anastomosis. Descendens noni-phrenic (main trunk) end-to-end anastomosis. Only one root (that from the sixth cervical nerve) was observed at the operation.

Seven months later the right vocal cord moved synchronously with the left vocal cord, but the abduction excursion on the right side was slightly more marked than the same movement on the left side. The abdominal wall and ribs moved on the right side in the same manner as those on the left side, showing there was no paralysis of the diaphragm.

*Second Operation* (*Left Side*)—eight months after first operation.—Recurrent laryngeal-phrenic (main trunk) end-to-end anastomosis. Descendens noni-phrenic (main trunk) end-to-end anastomosis.

Three months later there was no stridor or other evidence of difficulty of breathing.

Four months after the second operation the animal died of acute lobar pneumonia.

The microscopic sections of the nerves and intrinsic muscle of the larynx have not yet been studied. They will form the basis of another paper.

### EXPERIMENT VI.—*Dog.*

*Operation* (*Right Side*).—Recurrent laryngeal-phrenic end-to-side anastomosis. The end of the recurrent laryngeal nerve was sutured to a small transverse incision made in the side of the trunk of the phrenic nerve formed by the union of the roots from the fifth and sixth cervical nerves.

Two months after operation the animal was barking again.

Three months after operation the right vocal cord was straight, tension good. Slight abduction was observed during tranquil respiration. The barking of this dog had become a nuisance.

Seven months after operation the right vocal cord moved actively, equally, and synchronously with the left vocal cord.

*Diaphragm.*—Examination at University College with the radiographic screen by Professor Elliot Smith and Mr. Melville, who reported: "Both halves of the diaphragm contracting equally and normally." A few weeks previously, at another examination, the report was as follows: "Both halves of diaphragm contracting well. Right half is contracting well and as a whole, but a small area near the vena cava seems to be lagging behind the rest."

### EXPERIMENT VII.—*Hussar Monkey.*

*Operation* (*Left Side*).—Recurrent laryngeal-phrenic end-to-side anastomosis. The anastomosis was made by the method of lateral incision. (Fig. 19.) The phrenic nerve was seen to be formed of two bundles of nerves. A fine tenotomy knife was passed between them and made to divide one of the bundles. Into the gap thus made the cut end of the recurrent laryngeal was fixed by one suture of the finest catgut. The two nerve bundles of the phrenic nerve came respectively from the third and fourth cervical nerve. That from the fourth cervical nerve was the larger, and it was this bundle which was divided; so the anastomosis was between the fourth cervical root of the phrenic and the recurrent laryngeal nerve. Whether the healing process spread the anastomosis to the root from the third cervical nerve or whether the anastomosis remained a pure recurrent laryngeal-phrenic (fourth root) junction is not known.

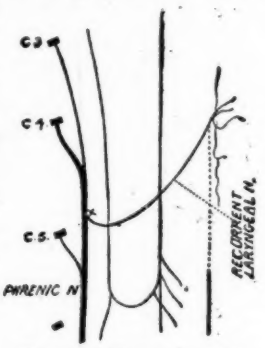


FIG. 19.—Hussar monkey (Experiment VII). Recurrent laryngeal-phrenic end-to-side anastomosis. The anastomosis was done by the method of lateral incision of the phrenic nerve.

Three months after the operation Dr. Eidinow examined the diaphragm with the radiographic screen. *Report:* Left half of diaphragm contracting normally. (Professor Leonard Hill concurred in the report.)

Six months after the operation the vocal cords were examined. *Report:* Deep anaesthesia: shallow breathing. The glottis in this animal is normally widely open. It never moves in its large cage, and therefore the respiratory centre has the minimum amount of work to do. The left vocal cord is tense and straight, but immobile. There is scarcely any movement of the right vocal cord.

Nine months after the operation the normal position of both vocal cords seemed to be wide abduction. There was slight abduction of the left vocal cord. Strong adduction of both cords was caused by partial asphyxiation, which was followed by strong abduction, which was not so marked on the left side as on the right. Deep anaesthesia abolished the movement of both cords. Two weeks after this examination the animal died.

### EXPERIMENT VIII.—*Large Barking Baboon.*

*First Operation* (*Right Side*).—Recurrent laryngeal-phrenic end-to-end anastomosis. Descendens noni-phrenic end-to-end anastomosis.

The recurrent laryngeal nerve had been divided three months before this operation. The distal end of the descendens noni nerve was not united end-to-side to the hypoglossal. During the operation the root from the third cervical nerve was not seen; the root from the fourth cervical nerve was comparatively large. It is not certain whether the trunk of the phrenic nerve formed by the junction of the third and fourth nerve roots was divided and employed in the anastomosis or whether only the root of the phrenic from the fourth cervical nerve was used. The laryngoscope showed the right vocal cord without tone, with a concave border and immobile. Before doing the anastomosis the recurrent laryngeal nerve was stimulated, when a slight adduction movement of the right cord was seen. Dr. Charles Mayo, Dr. Franklin Martin, Dr. Cabot, and Dr. Willis of America, and Dr. Tapia of Madrid, were present at the operation.

Four months after the operation the baboon was barking loudly again, and on using the laryngoscope the right vocal cord was seen to have regained its tone its inner border was straight, but it was still immobile. During this examination the anaesthesia was deep and the respiration very shallow.

*Second Operation* (*Left Side*), performed nine months after the first.—Recurrent laryngeal-phrenic end-to-side anastomosis.

The right vocal cord now shows a slight abduction excursion in tranquil respiration. For three months this monkey has been barking so loudly that the neighbours have complained of the barking of the "dog." After the operation which paralysed the left vocal cord the movements of adduction and abduction of the right vocal cord became quite obvious.

Six months after the second operation an examination of the movements of the diaphragm was made by Professor Elliot Smith, Dr. Beattie, and Mr. Melville, who reported as follows:

The right half of the diaphragm is contracting in the normal manner and the muscular portion appears to be completely functioning.

In the left half of the diaphragm the movement is not normal; amplitude less than that on the right side. Query: the muscular fibres are not all yet acting.

Two months before Professor Elliot Smith made this examination it was noted that this baboon suffered from stridor when excited or angry, and that the barking was less noisy, less frequent, and changed in character.

After the examination of the movements of the diaphragm an attempt was made to examine the vocal cords, but the examination was unsatisfactory and the animal died from an overdose of anaesthetic shortly afterwards. It was suspected that the stridor was due to a paradoxical movement of the vocal cords.

It may be added that the microscopical examination shows regeneration of axis cylinders in both recurrent laryngeal nerves and in both phrenic nerves below the anastomoses. All the intrinsic muscles of the larynx appear to the naked eye to be in a healthy state, though the microscopical examination of each intrinsic muscle is not yet complete. It is to be noted that the distal part of the descendens noni nerve was not united to the lower border of the hypoglossal; this was a mistake in the operation; the animal had a long neck, but it was believed, however, that the descendens noni was divided below the origin of the nerves to the sterno-hyoid and sterno-thyroid muscles. The nerve to the omo-hyoid muscle was divided.

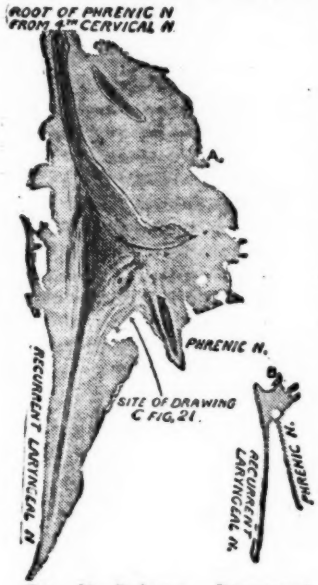


FIG. 20.—Baboon. Recurrent laryngeal nerve anastomosis, end-to-side, to the root of the phrenic nerve coming from the fourth cervical nerve (Experiment X). Death three months and twenty days after operation. B, The nerves removed after death. A, Microscopical sections. (× 10.)

The following three experiments illustrate the difficulty, even when every care is taken, of keeping monkeys alive for the long periods of time required for final results to be obtained in nerve anastomosis experiments.

EXPERIMENT IX.—*Baboon.*

*Operation (Left Side).*—Recurrent laryngeal-phrenic end-to-side anastomosis.

Three months later the left vocal cord showed no movement during tranquil respiration, but its border was straight and it had recovered its tone. A week after this laryngoscopic examination the monkey became ill and was destroyed by ether inhalation. Before death ensued the right recurrent laryngeal nerve was exposed and stimulated with the faradic current. The results were as follows:

Undivided recurrent laryngeal nerve:—(*a*) Weak current: both cords move equally. (*b*) Somewhat stronger current: strong adduction of opposite cord.

Divided recurrent laryngeal nerve:—(*a*) Proximal end: strong adduction of opposite cord. (*b*) Distal end—weak current: adduction of both cords. Somewhat stronger current: powerful adduction of opposite cord.

It is difficult to explain these movements of the vocal cords, but the same results were obtained in a similar case in which the recurrent laryngeal nerve on the side opposite to the one stimulated had been anastomosed to the phrenic nerve. It is worthy of note that though the left vocal cord was devoid of movement in tranquil respiration, yet when the opposite recurrent laryngeal nerve was stimulated by the faradic current its excursions were much more marked than those of the vocal cord on the normal side. It is therefore clear that a nerve current was already capable of passing through the recurrent larnygeal-phrenic anastomosis.

EXPERIMENT X.—*Baboon.*

*Operation (Right Side).*—Recurrent laryngeal-phrenic end-to-side anastomosis. The end-to-side anastomosis was to the root of the phrenic nerve from the fourth cervical nerve by the method of median incision. (Figs. 20 and 21.)

Three and a half months later the right cord had regained its tone—border straight. Dr. Eidinow examined the movements of the diaphragm by means of the radiographic screen; and reported that the right half of the diaphragm was contracting normally.

The animal was taken suddenly ill and died a few days later.

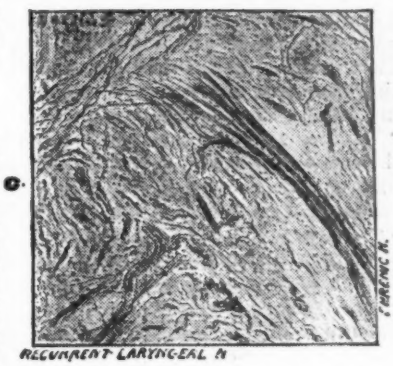


FIG. 21.—Microscopical section. (× 150.) This figure is marked C, and the site of the section is marked in Fig. 20.

EXPERIMENT XI.—*Baboon.*

*Operation.*—Recurrent laryngeal-phrenic end-to-end anastomosis. The end-to-end anastomosis was to the proximal part of the divided root of the phrenic nerve from the fourth cervical nerve.

One month later the animal died of tuberculosis.

*[A full description of the method of taking the cinematograph pictures will be contained in the second part of the paper to be published next week.]*

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# TRAUMA AS A CAUSE OF AURICULAR FIBRILLATION:

## *ITS MEDICO-LEGAL SIGNIFICANCE.*

BY

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Is trauma or physical strain to be accepted as an exciting factor in the production of auricular fibrillation?

This is a matter of considerable practical importance because of its medico-legal bearing, apart altogether from the obvious clinical interest. In the valuable and helpful book by Dr. E. M. Brockbank on *Incapacity and Disablement in its Medical Aspects* the author states quite definitely that he has "never met with a case in which auricular fibrillation could be attributed to sudden strain," and expresses the view that he would be "very unwilling to believe that strain could cause it." Since there is nothing to suggest that he has in mind the effect of strain on a healthy heart we can only conclude that he holds the view that strain will not induce fibrillation, even in a heart damaged by disease.

Our experience is contrary to that of Dr. Brockbank, and we feel that it is desirable to put on record a few cases in which the advent of fibrillation might reasonably be ascribed to trauma or physical strain.

The view is generally held that fibrillation, as met in clinical practice, is always superimposed upon a pre-existing pathological change in the heart. This probably holds good in the large majority of cases. It is open to doubt, however, whether there are not exceptions to this rule. Even granting that some myocardial change must precede fibrillation, the medico-legal question is simply whether physical effort does not prove in some instances the determining factor in its onset. And it must be remembered that once fibrillation has begun it tends to persist.

Auricular fibrillation is an added disability and is sudden in onset, though the ensuing cardiac failure resulting from the fibrillation may take time to develop and manifest itself.

That auricular fibrillation is a disability *per se* is beyond question. This is clearly shown in those patients in whom the fibrillation is paroxysmal, who know when an attack begins, and who are conscious both of the onset and the offset of the fibrillation. Such patients are clearly aware of an increased liability to shortness of breath on effort. They have no delusions in regard to the matter; previous to the onset of the disorderly rhythm they can undertake physical effort without distress, but while fibrillation is present such physical effort cannot be undertaken with comfort. When an attack is over (after a short period of subsequent exhaustion) the reserve is again unimpaired. Whatever the pathological changes in such a heart they are in existence before an attack, during an attack, and after an attack. The factor responsible for the disability is the onset and the presence of fibrillation. When that disappears the heart is back again to its old standard.

It is the ventricles which do the work of the heart. They are the pump. Their health or disease has nothing to do with the inception of fibrillation of the auricles Their

soundness has, however, a great deal to do with their power of dealing with the abnormal conditions set up by auricular fibrillation. We refer, of course, to the increased ventricular rate and the irregular force of the systoles. The auricles pipe, and the ventricles perforce must dance. The rhythm of their dance is both rapid and irregular, and if the ventricular muscle is unsound it is a dance that sometimes leads to death.

Eyster and Swarthout have shown that fibrillation diminishes the cardiac output by 40 per cent. in dogs whose myocardium was presumably sound and vigorous, and from the clinical evidence it is clear that the inception of fibrillation means an inadequate circulation and a sudden definite increase in the load which the heart has to bear.

In fibrillation the output of blood per minute is less, but the work of the heart is increased—100 to 160 ventricular contractions instead of 60 to 70 per minute, with a corresponding diminution in the resting of the heart. In other words, there is a diminution of the pumping power in spite of a greater expenditure of energy. As the direct result of the diminished output the essential organs are poorly

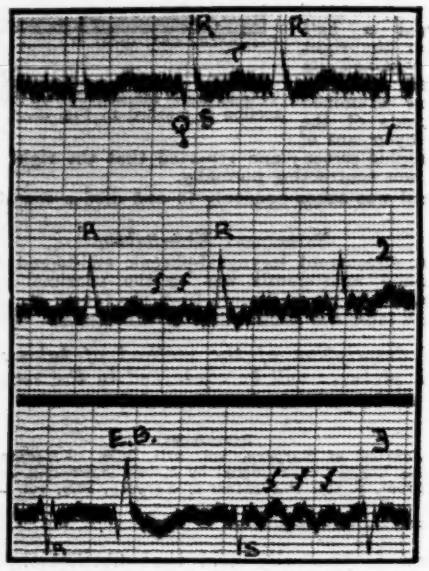


FIG. 1.—Electro-cardiogram showing fibrillation, with an ectopic beat (E.B.) in Lead 3, and relative preponderance of the left ventricle. QRS=Initial deflection of ventricular complex. *f*=Deflections due to fibrillation.

supplied with blood, and the individual, as an individual, becomes less efficient. Now, if it is proved that this added disability (A.F.) was brought on by the nature of a man's employment, then the employers of that man are liable. It is, therefore, important to know whether physical strain can reasonably be regarded as one exciting factor in the inception of this abnormal and disabling rhythm.

The experience of most of those who have carefully examined and cross-examined patients suffering from auricular fibrillation might be summarized as follows:

1. There is the group in which the *date of onset cannot be determined*—those patients in whom fibrillation causes little, if any, distress, and such distress not being associated in the patient's mind with any change in the heart, the myocardium being capable of tolerating the added load with equanimity. The disorderly rhythm is discovered by the doctor in the course of his physical examination. In this group one must place also those who present themselves with symptoms of cardiac failure, who believe that the heart is at fault, but who were unaware of the onset of the irregularity which is present.

2. There is the group in which the moment of the *onset of fibrillation can be clearly defined*, either because the patient recognized the sudden change in cardiac rhythm, or because the medical attendant (as the result of his own observations) is able to determine the date of the change in rhythm to within a day, or even within a few hours, of its onset—the predisposing influences in such a group being toxic influences, such as influenza, pneumonia, hyperthyroidism, or digitalis. Sudden emotional disturbance may have been the responsible factor. In this group one might also include those in whom there was no apparent exciting cause. The moment of onset was recognized, the predisposing condition being that of old-standing heart disease.

3. There is the third and smallest group in which fibrillation followed immediately upon some definite effort or physical strain. The onset, in point of time, was clearly defined and was closely associated with the effort or strain or shock—so much so that it would be unreasonable not to admit the relationship.

It is this third group which interests us.

Dr. J. G. Emanuel, in the Ingleby Lectures, 1925, gives the conditions associated with the onset of auricular fibrillation in 52 patients in whom the onset of the fibrillation was accurately noted. Among the conditions noted were:

| | |
|---|---|
| Running for a tram ... ... ... ... ... | 2 cases |
| Walking uphill ... ... ... ... ... | 4 ,, |
| Climbing steps or stairs ... ... ... ... | 3 ,, |
| Coughing violently ... ... ... ... ... | 5 ,, |
| Laughing heartily ... ... ... ... ... | 2 ,, |
| Unscrewing steam pipe ... ... ... ... | 1 case |
| Considered due to an electric shock ... ... | 1 ,, |

Dr. Emanuel does not go so far as to say that the physical effort in the above patients was the exciting cause,

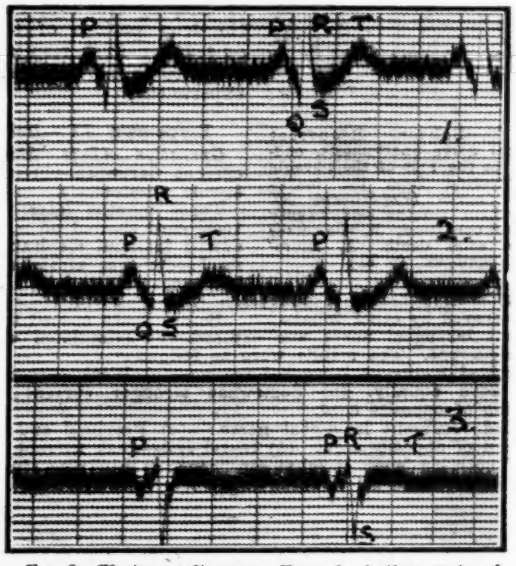


FIG. 2.—Electro-cardiogram. Normal rhythm restored. P=Deflection caused by systole of the auricles. P is absent in fibrillation.

and he accepts the view that "for fibrillation to occur the heart must be affected by rheumatism, syphilis, arteriosclerosis, Graves's disease, or some toxaemia." It is certainly true that myocardial damage or some toxaemia is generally present as a predisposing factor, but we do not believe that either is essential. In any case, the point at issue is rather whether physical strain or shock can precipitate the onset of fibrillation, either in a damaged heart or even in a heart which is apparently normal.

It is well known that auricular fibrillation, essentially a functional condition, is easily induced in the healthy heart of an animal, and it has been demonstrated that in animals both interrupted galvanic current and faradic shocks cause fibrillation.[1]

It is significant that in such experiments the fibrillation so produced does not cease when the stimulus which produced it is no longer active, but continues for an appreciable time, "after fibrillation."[2]

In 1913 Gossage and Hicks published one or two cases in which fibrillation occurred spontaneously in young patients with apparently healthy hearts.[3]

The cases which we propose to relate appear to justify the view (1) that the functional disability of fibrillation may be induced by sudden strenuous physical effort, or by a severe electric shock; (2) that fibrillation can occur in a heart which is sound as judged by ordinary clinical methods. And we hold it is a reasonable assumption that physical strain and effort does still more readily induce fibrillation in hearts already predisposed to its onset by myocardial damage or some toxaemia.

CASE I.—*Auricular Fibrillation following Exposure to Electric Current.*

Our first case is that of a healthy man exposed to a powerful electric current, with the result that auricular fibrillation replaced the normal rhythm of the heart. His age was 35. He had always been in excellent health, and there was no history of any rheumatic or syphilitic infection. On April 13th, 1926, he was sitting on an electric crane and accidentally placed his forehead against the "live terminals" of the crane, receiving 250 volts of "direct current." He experienced an intense burning sensation over the right eye and through the whole of the right side of the body, and was unable to release himself from the terminals for about two minutes—until, in fact, it was possible to switch off the current.

He was assisted to the ground in a very prostrate and collapsed condition and the burns of the face and hands were dressed. The nurse who attended to him states that at that time the pulse was markedly irregular and rapid. He slept that night at the St. Helens Cottage Hospital and returned home by tram-car the next day. Later in the day he went for a walk but returned in fifteen minutes "quite exhausted," and he himself noticed that his pulse was irregular.

Five weeks later he came to the heart clinic of the Royal Infirmary for examination and was admitted for treatment.

He was a strong, plump, healthy looking man. Clinical examination failed to reveal signs of disease in any organ. The heart was slightly enlarged (apex beat 4½ in. from mid-sternal line) and the cardiac action was completely irregular. The Wassermann reaction was negative. (Fig. 1.)

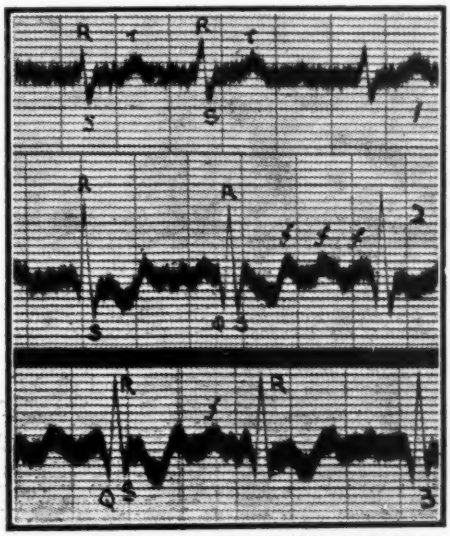

FIG. 3.—Electro-cardiogram showing fibrillation.

Tincture of digitalis was prescribed in 3p doses daily. At the end of eight days there was no change in the heart rate, and on June 4th treatment by quinidine sulphate in doses of 0.2 gram was begun. He received one dose every seventy-five minutes, and normal rhythm was restored after eighteen doses—3.6 grams in all. The heart rate became 70 per minute and regular. (Fig. 2.)

Fibrillation, once induced, tends to recur, and we were not surprised when on June 10th he reverted to fibrillation. Normal rhythm returned after 1.6 grams of quinidine; but in twenty-four hours (on June 12th) the auricles again fibrillated. After another 2 grams of quinidine the rhythm became normal and has remained normal up to the present (March, 1927).

He continued to take quinidine in capsules of 0.2 gram four times daily. This amount of quinidine has been reduced gradually, and he now takes one capsule every third day. He has had no

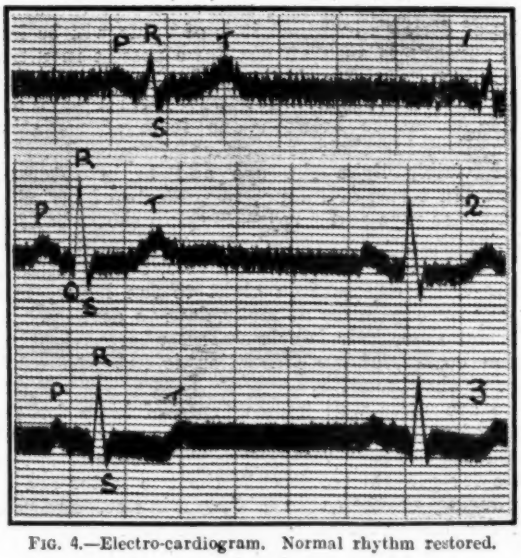

FIG. 4.—Electro-cardiogram. Normal rhythm restored.

return of the fibrillation, feels quite well, and has resumed his occupation of electrical mechanic, entailing moderately heavy work.

We are much indebted to Dr. John Roberts of the Glass Works, St. Helens, for the details of the accident and for the opportunity of treating this patient.

The next case is an example of auricular fibrillation induced by a combination of sudden physical effort and excitement.

CASE II.—*Auricular Fibrillation following Sudden Physical Effort and Alarm.*

The patient was a man, aged 32, in good health. One evening in July, 1912, he was walking home after a good supper of pastry and buttermilk when he was attacked by a dog. He was extremely frightened and with great difficulty struggled over a high wall. He was at once conscious of a peculiar sensation over the heart, and from that time suffered from shortness of breath and pain about the left shoulder-blade on any exertion.

On examination the heart was slightly enlarged, extending 4½ in. to the left of the mid-sternal line. There were no bruits. The heart rate was 100 and disorderly. Blood pressure 130 mm. Hg systolic for the larger beats.

Two months later, after treatment by rest and digitalis, the action of the heart, though still disorderly, was about 80, and the cardiac dullness 3¾ in. from the mid-line of the sternum, indicating that when first examined the dilatation of the heart was probably secondary to the fibrillation.

In April, 1926, fourteen years later, fibrillation was still present. The heart dullness extended 4½ in. from the mid-sternal line and a soft systolic murmur was occasionally heard over the mitral area. Digitalis is still required to steady the heart, but he is able to carry on his business so long as he is reasonably careful.

CASE III.—*Auricular Fibrillation during a Struggle.*

This patient was a man in whom fibrillation came on while he struggled with a horse. It bolted and he seized it by the bridle and had to run with it for over 100 yards, dragging at its head. He was a healthy man with a sound heart previous to this adventure. There was no history of any rheumatic infection. The fibrillation has persisted.

In neither Case II nor Case III was quinidine sulphate administered, as both developed their fibrillation more than ten years ago, before this was a recognized mode of treatment.

CASE IV.—*Auricular Fibrillation Precipitated by Sudden Effort.*

A man, aged 50, in 1922 ran hard to catch a train, and noticed at once that the action of his heart had become peculiar. He complained of a constant sensation of tightness around the chest and palpitation on the slightest exertion. On examination the ventricular rate was 120 and disorderly in rhythm. There was no evidence of valvular defect, but the heart was a little enlarged, and the deep cardiac dullness extended 4½ in. from the mid-

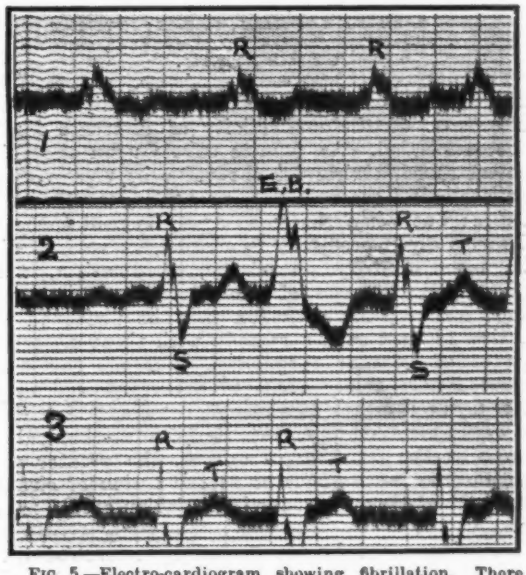

FIG. 5.—Electro-cardiogram showing fibrillation. There is, in addition, evidence of some degree of block in the right branch of the A-V bundle, and of an ectopic beat (E.B.).

sternal line. (Fig. 3.) The day before the onset of the fibrillation he had been examined for life insurance and the heart had been passed as normal in every respect. The fibrillation yielded to 0.4 gram of quinidine sulphate. (Fig. 4.)

In the summer of 1924 he had another attack, which was again terminated by quinidine sulphate.

His last attack, in November, 1926, was again caused by running smartly for a train. Within ten hours of the onset quinidine was given by Dr. E. Noble Chamberlain, and after a total dosage of 0.8 gram normal action of the heart was restored.

This patient is somewhat predisposed to fibrillation, for he gave an account of an illness in 1918 for which he was in hospital a

fortnight, and which, from his description, was similar to that in 1922. The significant fact, however, is that the attacks in 1922 and 1926 were undoubtedly due to severe physical effort.

CASE V.—*Auricular Fibrillation Started by Lifting a Heavy Weight.*

A man, aged 57, was apparently efficient until the onset of his present disability; he experienced no discomfort on exercise and was not conscious in any degree of the action of his heart. Twenty years ago he was in hospital suffering from rheumatic fever.

On January 30th, 1925, he was lifting a heavy "hip" on to a roof when he felt something give in his chest. His heart seemed to stop beating and then to race, there was acute pain all over the chest and he became very short of breath. He sat down for half an hour, during which time his heart continued to race. He was conscious of respiratory distress. The following day the pain was still present and the dyspnoea marked. He was seen by his doctor and later was admitted to one of the Liverpool infirmaries. While there a diagnosis was made of "strained heart."

He was a fairly well nourished man; he presented no cyanosis nor oedema. The conjunctivae were rather watery. There was marked dyspnoea on any exertion, even on walking slowly. This was accompanied by pain in the mid-line behind the sternum; the pain did not radiate in any direction. Pulse 160, very irregular; blood pressure for the larger beats 150 systolic, 60 diastolic. Cardiac thrust in the fifth and sixth spaces. Deep cardiac dullness 5½ in. to the left. There was a loud blowing systolic murmur over the apex beat—murmur conducted outwards and to some extent inwards; a short rough systolic over the aortic area, and a faint diastolic extending down to the left of the sternum audible during the long pauses.

The liver was enlarged and hard, 2 in. below the costal margin (he admitted taking four pints of beer daily). The urine contained a fair amount of albumin. The electro-cardiogram showed a rapid heart with a right bundle lesion (Fig. 5) and occasional ectopic beats originating in the right ventricle.

He responded well to digitalis, and his cardiac reserve increased, but he has never been able to work since the onset of the trouble.

It is reasonable to infer that fibrillation was the result of the sudden strain.

In Case v there was pre-existing disease both of the valves and of the myocardium, and the patient was more likely to suffer from physical strain than a normal healthy man. He broke down in consequence of the strain of his employment, and his employers were consequently liable. This has been recognized by them, and he is drawing full compensation for total disability. In reference to one case the law lords laid down that:

"If a man, in lifting a weight or trying to move something not easily moved, were to strain a muscle, or rick his back, or rupture himself, the mishap, in ordinary parlance, would be described as an accident."

"Were to strain a muscle." This man strained the most important muscle in his body—his heart—and its auricles fibrillated.

*Summary.*

Five cases are recorded in which fibrillation resulted from trauma; in one case the exciting factor was a powerful electric shock; in the remaining four the exciting factor was sudden physical exertion putting an unexpected and undue strain on the heart. In four of these men there was no evidence that the heart was diseased or abnormal, and up to the onset of fibrillation they were living active normal lives.

We hold that the evidence justifies the view that sudden strain may, and frequently does, initiate auricular fibrillation and induce cardiac failure in men and women with diseased hearts. We would go further and say that fibrillation may result from physical strain in hearts that are apparently normal, so far as can be determined by ordinary clinical methods.

The medico-legal significance of this is of considerable practical importance, and it was for this reason that we have put these cases on record.

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# ULTRA-VIOLET RAYS: THEIR PLACE IN MEDICINE.*

BY

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IN certain quarters a prejudice against light treatment exists because of the multiplicity of disorders for which it is recommended. As definite effects upon the skin can be demonstrated, claims for the value of ultra-violet rays in dermatological cases do not, as a rule, meet with much opposition; but when the same agent is said to be useful in all forms of tuberculosis, in rickets, in various diseases of the blood and lymph glands, rheumatism, neuritis, herpes, organic diseases of the nervous system, syphilis, and even cancer, the orthodox may be pardoned for an inclination to class such a remedy with those advertised in the pages of popular magazines. Yet all the maladies enumerated have really been cured or improved by ultra-violet rays, used either alone or in combination with other forms of radiant energy. Apart from mechanical interference with the function of organs, the greater part of organic disease is directly due to the action of circulating poisons, and of these poisons the majority are of microbial origin.

In disturbances of health caused by microbial invasion the symptoms are not due to the microbes as such (embolism apart), but to the toxins they generate. Nevertheless, provision is made in the body, by phagocytic attack, to deal with the actual germs, as well as with their poisonous products.

Medical treatment must aid and stimulate natural processes. For the most part direct aid is impossible at present; diphtheria antitoxin is about the only example. Vaccines, and even so-called specific drugs, such as neo-salvarsan and quinine, are valuable only so long as the host-tissues retain a power of response. The modes of reaction of the body to external stimuli are comparatively few, although the stimuli themselves may be almost infinitely varied. A similar result may be brought about by diverse causes, or apparently diverse results by a single cause. If we can discern an agent capable of activating, at least in some degree, all the defence mechanisms of the body, then the list of diseases in which it is of value will be large.

An approach to such an agent we possess in ultra-violet rays. All radiation is due to the vibration of electrons, and travels in the form of waves through the ether. The sole difference between one form of radiation and another lies in their respective frequencies. In the case of visible light the eye and brain interpret the frequency in terms of colour; in the case of invisible light—ultra-violet rays and *x* rays—the skin shows itself capable of distinguishing between different frequencies or wave-lengths by its reaction. For example, an erythema follows an ultra-violet exposure in eight to ten hours, but after *x*-ray exposure requires as many days to develop. And, in the former case, hair is stimulated, whereas in the latter epilation occurs, and regeneration is not well established for two or three months.

There are three well known types of lamp for the production of ultra-violet rays—the carbon arc, the tungsten arc, and the mercury vapour arc. The former is the most suitable for general treatment; the two latter are capable of producing erythema in a few minutes, and are best suited for local treatment. The production of erythema would appear to be for the most part essential to the successful local treatment of skin disease. Acne, dry eczema, alopecia, impetigo, pruritus, boils, scleroderma, and extensive varicose ulcers are some of the conditions which yield to local applications. A series of erythema doses over the painful area in cases of neuritis, sciatica, and lumbago will often effect a cure; and, applied over the lower abdomen, may relieve the pain of cystitis. These results may be "explained" by saying that the erythema induces a local phagocytosis, and that, in the case of deep-lying trouble, cure is brought about by counter-irritation.

* Abstract of an address to the Croydon Division of the British Medical Association.

The effects of general radiation are clinically no less definite, but many medical men refuse to credit this. Steenbock and Black, of the University of Wisconsin, have shown that ultra-violet rays can reactivate cod-liver oil the antirachitic power of which has been destroyed by heat; and can also confer this power upon other fats, including that present in the human skin. This "explains" their action in rickets in terms of cod-liver oil. Again, Leonard Hill and his co-workers have proved that an erythema dose over about one-quarter of the body surface raises the bactericidal power of the blood. Here is a possible explanation, in bacteriological terms—which, by virtue of thirty years' use, have become familiar and respectable—of the action of ultra-violet rays in tuberculosis. But when it is stated, for example, that great benefit may result from their use in disseminated sclerosis, in pernicious anaemia, and in Hodgkin's disease, there is no obvious link with familiar facts.* Yet it is generally believed that these disorders are the result of toxins, and that these toxins are probably of microbial origin. The bodily resistance to known toxins is raised by ultra-violet rays, and this stimulation is effective against such widely different organisms as the tubercle bacillus and the cocci of suppuration. Surely, then, it is not very difficult to admit that it may be effective against other, and at present unknown, organisms.

It is often said that light treatment is useless, and even dangerous, in phthisis, but by cautious dosage—erythema should be avoided—and a careful selection of cases, much good may be done. The patients must not be very ill, nor must they be of the well known type which offers little resistance to the spread of the disease. The kind of patient who would in any case struggle on for some years, doing a certain amount of work, is the one who will derive definite benefit. His working life will be prolonged, and his outlook on life altered for the better.

If we bear in mind steadily that for the most part light acts as a stimulus to natural power of defence, we shall understand its limitations. The moribund patient cannot respond, and the patient with high temperature is in no state to answer further calls. Ill health of any kind due to a concealed septic focus cannot be permanently benefited. "Rheumatic" or "neuritic" pains caused by an abscess at the apex of a tooth are examples in point. When, however, we suspect a toxin, but cannot locate it, the use of light is justified in so far as it places the patient in the best possible condition to resist the hypothetical poison.

Finally, it should be noted that ultra-violet rays form but a small part of the total of wave-lengths in nature; and while their value is great, even if used alone, it is vastly enhanced by a combination with other radiations, notably *x* rays. Their addition is an essential factor in the cure of some skin troubles; and, on the other hand, *x* rays may be employed more freely in deep-seated cancer if ultra-violet rays are used to prevent injurious effects on the blood.

The actual carrying out of light treatment may well be delegated to competent lay operators, acting upon definite prescriptions. But the indiscriminate use—or, rather, abuse—by unqualified persons of ultra-violet rays as a cure-all is likely to bring discredit upon the treatment.

* Since the delivery of this address good results have been obtained in the treatment of the inco-ordination and depression which follow "sleepy sickness."

# SPORADIC BACILLARY DYSENTERY IN ENGLAND.

BY

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THE following brief account of two recent outbreaks of dysentery or pseudo-dysentery, chiefly affecting children, would seem worthy of record, especially in view of the pathological and bacteriological findings. The sudden and limited outbreak, confined in each case to one household, seemed to point to some kind of food poisoning, and it was with the view of ascertaining the character of the toxic agent that a complete pathological and bacteriological examination was made in the first outbreak described.

The first outbreak involved four children from one household in Warrington. The first child attacked, S. D., aged 1 year and 9 months, became ill on February 27th, 1926, with sickness and drowsiness; then severe diarrhoea set in. Three days afterwards (on March 2nd) A. D., aged 6 years, and G. D., aged 4 years, were taken ill with sickness and diarrhoea. All three were noted to be drowsy at the commencement of the illness. Dr. David Meikle, their medical attendant, stated: "All had symptoms of acute gastro-enteritis, vomiting, diarrhoea, green stools loaded with mucus, no blood or rise of temperature, rapid but regular pulse. The two elder children were semi-conscious, but the youngest was quite conscious. The eldest had had an epileptiform seizure in the night." R. B., aged 2 years and 9 months, was taken ill on March 4th with vomiting and diarrhoea. Drowsiness was not noted in this case.

All the children were removed to Whitecross Hospital, Warrington, on March 4th. S. D. died on March 8th, and R. B. on March 9th, and *post-mortem* examinations were ordered by the coroner. A. D. and G. D. survived.

*Post-mortem Examinations.*

S. D.—The body was that of a well nourished male child. *Post-mortem* lividity was well marked over the back and buttocks. Rigor mortis was present. The heart and lungs were normal; the left ventricle contained a large amount of dark fluid blood, and there was a large dark clot in the right auricle. The liver, spleen, kidneys, and pancreas were normal. The stomach, which was practically empty, was removed between ligatures for further examination. About the middle of the small intestine signs of congestion appeared, and continued to its junction with the large intestine, which was very congested, showing haemorrhagic patches of inflammation studding the large intestine almost throughout its whole length.

R. B.—The body was that of a well nourished male child. The body was warm, and rigor mortis had not yet set in. *Post-mortem* lividity was present in slight degree. The heart and lungs were normal. There was a small amount of dark fluid blood in the left ventricle, and a slight amount of *post-mortem* clot in the right ventricle and auricle. The stomach was removed between ligatures unopened for further investigation. The large intestine was also removed between ligatures. The lymph glands in the mesentery of the large intestine presented a remarkable appearance. There was a continuous row of enlarged lymph glands close to the intestine throughout the whole of its length. The other glands in the mesentery were also enlarged. The small intestines contained dark coloured faecal matter, and the ileum was much congested, and contained dark fluid blood. The liver, spleen, and kidneys seemed normal. The brain vessels were congested to a moderate degree with dark fluid blood, but were otherwise normal.

As food poisoning was suspected, the stomachs, intestines, and pieces of the kidneys, liver, and spleen were sent to the pathological laboratory of the Ministry of Health, packed in 30 per cent. glycerin. The pathologist's report, dated March 17th, 1926, was received from Dr. A. W. MacFadden. It was as follows:

"None of the specific food poisoning organisms or dysentery bacilli could be found in the tissues from the two cases. The circumstances point, I think, to an acute infection of the gastro-intestinal tract, and I should suspect an infection of *B. aertrycke*. It would be useful to test the serums of the surviving children against this organism and against the Morgan's bacillus, which I obtained from small intestine and liver of S. D."

Samples of blood from the surviving children were requested in order to test the serums for agglutinating properties. A blood sample from A. D. was sent, and the report was as follows:

"The blood serum from A. D. shows no trace of agglutinin for the *aertrycke* group of bacteria—that is, there is no evidence that the outbreak was one of 'food poisoning.' But the blood serum agglutinates the *B. dysenteriae* 'Y,' which indicates that the condition was almost certainly bacillary dysentery."

A good sample of blood could not be obtained from the other surviving child, G. D., but blister fluid resulting from emplastrum cantharidis was sent. This blister fluid gave no agglutination with *B. dysenteriae*. It may be that the absorption of cantharidin in the blister fluid affected any agglutinating properties that it possessed.

A careful investigation of the food eaten by the affected children was made by Chief Inspector Flood. Their meals consisted of toast and tea for breakfast, chip potatoes and cakes at midday, and eggs boiled and made into sandwiches for tea. The mother stated that the boy A. D. told her that the children were playing in the ash-bins on the morning of February 27th, and that S. D. was seen eating

orange peel picked from the bins. No tinned salmon, meat, or milk, or prepared foods of any kind had recently been used in the house. No other persons in the household or other children in the neighbourhood had been ill in a similar manner.

The other outbreak occurred at Antrobus, Cheshire, and was reported to one of us (J. S. M.) by Dr. Love of Great Budworth.

A boy, aged 4 years, was taken ill on December 1st, 1925, with vomiting and diarrhoea, temperature 102°. There was a little blood in one of the motions. Two days later the temperature became normal, and the child seemed better. On Monday, December 6th, diarrhoea recurred, and the temperature rose to 100°, with pain in the left side of the abdomen. At 2 a.m. on December 7th he had acute pain in the left side of the abdomen, with great distension. He was sent to a Manchester nursing home for operation, but died before any operation was performed. A sister, aged 2½ years, was taken ill on December 4th with diarrhoea and vomiting; blood and mucus were present in the stools. Diarrhoea continued until December 9th. The child recovered. A maid and visitor in the house also had diarrhoea for a couple of days. Mrs. C., aged 35, was taken ill on December 13th with frequent diarrhoea—blood, mucus, and shreds in the stools. A specimen of this was sent to the Runcorn Research Laboratory in a sterile bottle, and Dr. H. A. Mitchell reported as follows:

"Cultivations made from this specimen have yielded cultures of (1) *B. coli communis*, (2) a Gram-negative non-motile bacillus producing a turbidity in broth. It causes acid production in glucose, mannite, and maltose, but has no effect on saccharose, lactose, dulcite, and raffinose, nor on litmus milk or gelatin. It failed to form indol, and gave only slight agglutination with specific Flexner 'Y' serum. Classification, *Bacillus paradysenteriae* closely resembling the Flexner 'Y' type as described by Park and Williams."

A culture of this organism was sent to the Ministry of Health laboratory, and the report was as follows:

"The culture gives the fermentation reactions of the Flexner group of the *B. dysenteriae*, but fails to form indol, and gives only insignificant traces of agglutination or none with the specific serums of all the types of the Flexner group. It is not one of the standard dysentery bacilli, but may possibly be pathogenic."

A sample of blood was taken from Mrs. C. to test its agglutinating properties. This sample proved insufficient, and the patient refused to allow another sample to be taken.

The cases in this household were at first thought to be due to food poisoning, but nothing could be discovered likely to produce the condition. Milk and water were examined, and the well, formerly of good repute, which supplied the household was found to contain *Bacillus coli* in 1 c.cm. Other users of this water were not affected. All were warned to boil the water after the contamination was revealed. These cases, together with an account of an outbreak published by one of us (J. S. M.) in 1921 (*Lancet*, April 16th, p. 802), show that small localized and virulent outbreaks of colitis occur in this country, especially affecting children, and evidently have some etiological relationship to a bacillus of the dysenteric group of the Flexner "Y" type.

# Memoranda:

## MEDICAL, SURGICAL, OBSTETRICAL.

### THE OPERATION OF TONSILLECTOMY.

I WAS interested to read in your issue of January 8th (p. 56) an account by Dr. Lodge of an ambidextrous method of performing tonsillectomy, though a little befogged by the various anatomical movements described. Many years ago it occurred to me that ambidexterity in tonsillectomy would be a great advantage in securing without change of position the second tonsil, which so quickly becomes obscured by blood, and consequently I set about practising it. The steps of the operation are as follows.

Doyen's gag is introduced slightly to the left of the middle line and ethyl chloride administered. The operator stands on the patient's right, the nurse on the left, and the anaesthetist in the usual position at the head of the table. The nurse holds two adenoid curettes (Sir StClair Thomson's for preference), one in each hand, with the blades uppermost. I invariably use artificial light as it makes one independent of dull days and inadequately lighted rooms.

If the operation is performed in an institution the head of the table is slightly raised, the sliding electric lamp pulled down by the anaesthetist, and the light reflected into the mouth from the ordinary forehead mirror worn by the operator. I have got into the habit of removing the left tonsil first, therefore I take the guillotine (Jenkins's guillotine for choice, the blade of which can be blunted on sandstone) in the left hand, depress the tongue with the index finger of the disengaged hand, and completely expose the tonsil to be enucleated. The ring of the guillotine is then passed over the lower pole, the handle of the instrument brought right across to the opposite side and depressed, while the point is raised and pushed well behind the tonsil, which with the soft palate in front of it is pushed well forwards. The index finger is then released from the tongue and used to push the tonsil (which can be distinctly felt under the soft palate) through the ring of the instrument until the circumference of the latter can be felt all round; the blade is then driven home and with a slightly wriggling movement the tonsil is brought out entire.

The guillotine is next taken in the other hand and the procedure repeated on the other tonsil. The nurse then relieves the operator of the guillotine and places a curette in his hand (one usually suffices); it is passed into the mouth blade downwards until it reaches the pharynx; it is then rotated through 180 degrees and passed up behind the soft palate until it impinges on the posterior end of the septum; it is then pushed backwards and upwards, and finally levered downwards in one sweep, using the incisor teeth as a fulcrum, and the adenoid growth brought out in the cage.

In this way I have enucleated many thousands of tonsils, and during the past three years have been most ably assisted by my colleague, Dr. Macleod, senior medical officer, Hull Dispensary, who has anaesthetized some 3,000 patients for me without a hitch.

I wish it to be understood that I am not claiming anything new or original—the method of enucleating the tonsils described above will be recognized as that introduced by Whillis and Pybus some years ago, and is, I believe, in general use—I am simply giving my experience as to how, with a combination of artificial light, team work, and ambidexterity, the operation which has taken so long to describe can be performed in a few seconds.

ALFRED J. S. ROE,
Aural Surgeon, Hull Dispensary.

### PULMONARY EMBOLISM FOLLOWING CHILDBIRTH.

THE following case, which occurred in 1925, may be of interest in connexion with the two cases reported in the BRITISH MEDICAL JOURNAL of November 6th, 1926 (p. 835).

A healthy woman, aged 27, gave birth to her third child after a perfectly normal labour and without any intervention. I was not present at the birth, but was sent for two hours later by the nurse. I found the patient complaining of faintness, with a livid face and anxious expression, laboured breathing of 40, and a pulse rate of 160. The placenta had been delivered normally soon after birth and there had been no abnormal loss of blood. The uterus was fully contracted. Examination of the heart revealed no bruits, but the sounds were greatly accentuated, the second in the pulmonary area being exceptionally loud and sharp. During the examination the heart rate increased rapidly to 200.

Various stimulants were given, such as intramuscular injections of camphor, ether, strychnine, and digitaline, but without effect.

The patient vomited once and then lapsed into unconsciousness, and died in less than fifteen minutes after my arrival.

No *post-mortem* examination was performed, but the only possible diagnosis seemed to be that of pulmonary embolism.

G. W. V. PARRY, M.R.C.S., L.R.C.P.
St. David's, S. Wales.

### OCULAR SYMPTOMS DURING CATAMENIA.

IN the issue of the BRITISH MEDICAL JOURNAL dated May 8th and 15th, 1926 (*Epitome*, para. 503), a case of retinal haemorrhage synchronous with onset of menstrual period is described. The patient subsequently developed scleritis and she proved to be tuberculous. In view of this it may be of interest to record the following case.

A married woman, aged 29, reported that her left eye regularly became sore two days before menstruation and cleared up two days after menstruation ceased. She was found to have mild episcleritis. A month's local treatment with 1 per cent. yellow mercuric oxide ointment and massage was not successful in preventing a recurrence of the phenomenon. On obtaining a history of acute rheumatism, regular doses of sodium salicylate (15 grains thrice daily) were administered by the mouth, with the result that the patient has not had a relapse for six months, although treatment was only continued for two months.

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# Reports of Societies.

## USES AND LIMITATIONS OF ULTRA-VIOLET RADIATION THERAPY.

AT a joint meeting of the Sections of Medicine, Dermatology, and Children's Diseases of the Royal Society of Medicine on March 22nd, a discussion was held on the uses and limitations of ultra-violet radiation therapy, Dr. HUGH THURSFIELD in the chair.

Dr. S. ERNEST DORE said that the history of light therapy in its local application in cutaneous diseases went back to 1893-94, to the introduction of red-light treatment of smallpox and concentrated sun and arc-light treatment of lupus vulgaris by Finsen. Phototherapy by means of concentrated actinic rays was introduced into this country about 1900, when Finsen's lamp was employed at the London Hospital. That lamp was still in use, but in other quarters it had been largely superseded by the smaller Finsen-Reyn lamp. Light treatment might be said to have reached its level in this country twenty years ago, when it was generally recognized as a valuable therapeutic measure, chiefly in diseases of the skin, but for some reason, possibly the superior claims of *x* rays, it did not come into use for general purposes until much later. In 1916 the Simpson lamp was introduced, for which exaggerated results were claimed at the time. It was even stated that with this lamp asthma and other conditions were benefited, not only by exposure to the light, but by inhalation of the fumes from the burning of the wolfram electrode. In 1918-19 the combined use of local and general light treatment in lupus began, mercury vapour and tungsten lamps being largely employed. Light treatment in its general application in constitutional diseases might be said to have started in 1902-3 when Bernhard and Rollier employed heliotherapy in surgical tuberculosis, followed by Gauvain in 1908, using natural and artificial light. In 1919 Huldschinsky demonstrated the value of ultra-violet radiations in human rickets —work which was confirmed by English and American observers. No discussion of light treatment would be complete without reference to its possible harmful effects. The bogy of carcinoma as a sequel to ultra-violet treatment had been laid by Dr. Reyn and Dr. Sequeira, both of whom stated that they had never seen such a case. Certain mechanical dangers might be mentioned, such as the breaking of quartz burners, fire from spluttering electrodes, and electric shock. Too frequent or lengthy sessions might produce debility and depression, and there was always the possibility of aggravating a latent tuberculosis. Ultra-violet radiation treatment had recently received a great impetus. It was being used in many new directions. He knew of one medical practitioner who regularly employed it as a preventive measure for persons who were quite well. Its increasing use in municipal clinics might be excellent, but he thought that something ought to be done to check exaggerated statements which gave rise to false expectations.

Dr. H. M. ODDY spoke of the applications of light in children's diseases. Children usually reacted much more quickly than adults, therefore the dose had to be reduced appropriately. It had been suggested that for children half the normal adult dose should be given, and for infants half the child dose. It was much more difficult to produce an erythema in a young child than in an adult, and this meant that the minimum erythema dose could not be used in the treatment of children. The symptoms of over-dosage were increased irritability and restlessness, with possibly disturbed sleep, persistent loss of weight or failure to gain weight under treatment, and perhaps digestive disturbance and loss of appetite. He thought that better results were obtained on the whole with mercury vapour than with the carbon arc, except perhaps in surgical tuberculosis. The length of treatment must vary with the disease, but from twelve to twenty treatments at the rate of two or three a week should be followed by a month or two of rest. In small infants pigmentation did not occur as a rule, but in spite of its absence the clinical results were excellent. Metabolism was much improved by light baths, and although Dr. Leonard Hill had shown that this was mainly due to the effect of cold air on the skin rather than to ultra-violet radiation, since exposure of the skin was necessary for the treatment the two could hardly be dissociated. The radiation was a valuable adjunct in the treatment of rickets. It was indicated also in surgical tuberculosis unless there was active disease in the lungs. If the disease in the lungs was quiescent, treatment might be given with great care, but it must be avoided in all cases where there was pyrexia. Bone and joint cases did better under light treatment than peritonitis or gland cases. Light was useful for the nursing mother whose milk showed signs of failing, and for the infant suffering from malnutrition. Among older children, the pale, thin child, with hypotonic muscles, though with no evidence of disease, often showed good results under light, but there were more failures than one would expect. For debility following severe illness or operation there was no tonic so good as the light bath. In some cases of asthma light baths did a certain amount of good. Of the treatment in blood conditions he had had little experience, but in theory he thought it contraindicated in leukaemia.

Dr. ALBERT EIDINOW said that experiment had shown that there was no direct bactericidal action of light in the living tissue; experiments as to whether light, acting on the skin or tissue, produced some bactericidal substance which became absorbed and carried through the circulation were not yet complete, but it could be said that an erythema dose of light produced a leucocytosis beneath the skin, and this fact gave some clue to the biological action. There was permeation of the plasma through the capillary wall, and wandering leucocytes were found in the oedematous tissue. It had been shown that the skin rapidly became immune to the action of ultra-violet radiation. The surface of the skin exposed had an important bearing on the clinical result; experiment had shown that there was a definite optimum area of skin to expose—namely, one-sixth of the surface area of the animal or patient under investigation. Bearing this in mind, a patient could be kept in a state sensitive to light for a long time with short exposures. It was quite possible that many of the bad and indifferent results with light were due to the fact that the skin had become immune through repeated doses. The question of dosage, to his mind, depended much more on the area of skin exposed than on the actual quantity of light employed.

Sir HENRY GAUVAIN remarked that very little work had been done on pure or unmixed ultra-violet radiation, and a point to bear in mind in considering all the results was the possible effect of other rays which were ordinarily mixed with those in the ultra-violet. In natural sun treatment, which was still the best form of radiant treatment, at all events in surgical tuberculosis, the proportions of infra-red rays, visible rays, and ultra-violet rays were said to be respectively 80, 19, and 1 per cent. A larger proportion of ultra-violet radiation was obtained with the carbon arc, but the carbon arc light baths were not so good as the natural sun baths, and in the case of mercury vapour, in which the proportion of ultra-violet was greater still, the value was even less. In other words, in the treatment of surgical tuberculosis the sun came first, the carbon arc second, and the mercury vapour lamp a long way behind. Thus there must be a great deal of value in the radiations other than ultra-violet, or if these other radiations had no positive action themselves they might, by some dilution and modification, intensify the value of the ultra-violet. The value of light largely depended on the power of response of the individual treated, and one reaction which personally he considered of very great importance was pigmentation of the skin. Pigmenters, in the majority of cases, did very much better than non-pigmenters. In surgical tuberculosis the healing lesions were healed more rapidly under light treatment, but in the case of progressive lesions there was no such effect.

Dr. J. H. SEQUEIRA agreed with Sir Henry Gauvain's remarks about the utility of the mixed rays. In all his clinical work at present he was using mixed rays, and he entirely agreed also with the order of importance of the various sources which Sir Henry Gauvain had given: the sun first, the carbon arc, perhaps reinforced by tungsten, second,

and the mercury vapour, with a more limited field, third. General treatment, without any local measures whatever, had been declared effective in the healing of lupus vulgaris, both of the skin and the mucous membrane, and this had been confirmed in his own clinic, but in no case was it wise, even in the treatment of a disease like lupus, which reacted both locally and generally to light, to rely entirely upon the general irradiation of the body. Some work had been done on the action of light on basal metabolism. Dr. Argyll Campbell, working in Dr. Sequeira's clinic, had found that no change in the basal metabolism was produced solely by the general light bath. The speaker's experience was that light treatment did not prevent the onset of acute specific fevers, and in his own clinic the patients had suffered from varicella, measles, whooping-cough, and there had even been cases of cerebro-spinal meningitis. In post-febrile debility the treatment had great value. An experiment was about to be undertaken in one of the Metropolitan Asylums Board's hospitals of illuminating every alternate patient admitted for whooping-cough; some interesting information as to the value of light given during the course of an infection should be available in that way. With regard to pigmentation, he had seen good results in extensive lupus in patients who had not pigmented at all. The question of the area of the body which was to be exposed to light required further investigation. Dr. Sequeira also mentioned the extraordinary value of general light baths in the treatment of some of the more chronic affections of the eyes, especially in children.

Dr. KATHERINE GAMGEE said that children under 5 reacted very differently from older children, with whom the reaction was very much the same as in the case of the adult. With regard to rickets, she had had experience of some severe cases, which had made apparently no headway under cod-liver oil treatment, and took a sudden leap forward when put on light. The nervous child reacted in an extraordinary way, and, in particular, cases of nocturnal enuresis showed a marked response. An analysis of about twenty or thirty cases showed that the percentage of cures was slightly higher with this form of therapy than with other forms, though she knew that it was difficult to formulate any conclusion from so small a series. The convalescent child and the child about to be submitted for operation for tonsils and adenoids offered very suitable cases for treatment. Light treatment shortened convalescence. The results in anterior poliomyelitis she had found very disappointing unless the child was submitted to the treatment very early. To her mind the remarkable thing about light treatment was that the body cells became unresponsive with extreme ease; this was quite apart from any phenomenon of pigmentation, and occurred in children who did not pigment.

Dr. A. C. ROXBURGH thought it almost impossible to make a fair comparison between the values of natural and artificial light, for the reason that sunlight treatment must necessarily be given in the open air, whereas the carbon arc, or any other form of arc, had to be given in a comparatively stuffy room, because any draught upset the work. Thus the comparison between the two sources was vitiated. Many speakers had referred to light treatment as non-specific. This was borne out by an analysis of the statistics of cases treated at St. Bartholomew's Hospital during twenty-one months. There were 272 cases, and the curious thing was that whether one took tuberculous infections, non-tuberculous infections, or non-infected cases, the proportion of cases cured or greatly improved in each of the three groups was round about 20 per cent. In the cases which were somewhat improved the proportions were rather different—namely, 36 per cent. of tuberculous infections, 57 per cent. of non-tuberculous infections, and 48 per cent. of non-infected cases. Of all the cases treated, 21 per cent. showed cure or great improvement, 46 per cent. some improvement, and 33 per cent. were not improved or were made worse.

Mr. L. V. CARGILL endorsed Dr. Sequeira's remark about the value of general light baths in the treatment of chronic affections of the eyes. He had found general carbon arc baths give good results in conjunctivitis and keratitis and tuberculous diseases of the eye. Such conditions as detached retina could not be benefited, which, of course, had had to be denied.

## CHEMOTHERAPY.

AT a meeting of the Section of Comparative Medicine of the Royal Society of Medicine, held at the society's house, 1, Wimpole Street, on March 16th, at 5.30 p.m., the President, Sir D'ARCY POWER, in the chair, Professor MOELLGAARD of Copenhagen read a paper on "Some of the principal questions in chemotherapy, with special reference to the heavy metals."

Professor Moellgaard began by saying that, according to the usual modern conception, specific therapy was identical with immunotherapy; in other words, that the therapeutic agent was the metabolism of the animal organism itself, and that it attacked the invading parasite only, leaving the sound host-tissue untouched. In this respect the immunological power of the host undoubtedly represented the ideal form of therapy. In many cases, however, this power failed to cure the disease, even when general or vaccine or serum treatment was given also, because either the host could not produce this curative power in sufficient quantity or because its action on the parasite was prevented from becoming effective. In these cases an attempt must be made to alter the dominating pathological conditions of the host, either by removing the cause of the failure of the development of these powers, or by attempting to destroy the parasite itself. Both of these possibilities had been considered by scientific chemotherapy from its origin in the work of Ehrlich. The purpose of chemotherapy was to discover substances which caused, directly or indirectly, the maximum amount of harm to the parasite with the minimum amount of injury to the host. So far, no substance had been discovered which, having a considerable effect on the parasites, was at the same time harmless to the host, and present knowledge of the relationship between chemical composition and the pharmacological action of drugs was too slight and fragmentary to enable such substances to be prepared. Accordingly, chemotherapy was at present, and would remain for many years, a series of approximations to the ideal type of therapy which was created by the natural powers of the animal body itself. This was evident by the fact that the real worth of any drug in present use might seriously be doubted, because its influence was never limited to a certain parasitic organism, but often extended to many different species. Accordingly, the action, even of the best of these substances, semed to be due to general chemical affinities. Ehrlich's original conception was "*corpora non agunt, nisi fixata*," or that the action of chemical substances on the living cell was subject to the existence in such substances of chemical groups or radicles susceptible of reaction with other chemical groups in the cell. This rule, the basic principle of our whole idea of metabolism, was generally accepted. On the other hand, the conclusions Ehrlich drew—namely, that a parasite could only be killed in the host by chemical compounds having a special chemical affinity for its protoplasm (in other words, a pronounced *parasitotropy*), could not be accepted as a correct interpretation of the known facts. In the first place, they failed to account for the fact that the drug did not react on the parasite merely in a watery solution, but was injected into a very complicated heterogenic system, the animal body, where it underwent chemical changes which might alter its therapeutical action. Secondly, experience seemed to indicate that chemical compounds might kill the parasites, not by reacting on them, but by stimulating the natural reactions of the host. This might be of very great importance to the future development of chemotherapy, because it meant that not only were they dealing with the chemical substance and the parasite, but also with the reacting tissue of the host. Browning had expressed this epigrammatically when he said that chemotherapeutical substances reacted in co-operation with the tissue.

Professor Moellgaard then proceeded to consider the more important modern researches in chemotherapy and the light which they threw on this co-operation. The drugs he dealt with fell into two groups: the salvarsan and sanocrysin series and the trypaflavine series. Sanocrysin, when given subcutaneously, was relatively effective, whereas local applications were ineffective. The reverse was true for trypaflavine, whose local action was much more effective

in destroying the parasite. He also drew attention to the effect of sanocrysin in tuberculosis. When laboratory animals were treated with this salt four to five days after infection, about 95 per cent. recovered; if the injection was during the second week, the cases which recovered amounted to about 75 per cent.; while if the drug was given at the same time as the bacillus, even though it was repeated later, none recovered. This seemed to suggest that it was necessary that the disease should commence before treatment was applied. He then considered in detail the theory of Ehrlich, and the modern theory of the catalytic action of these substances, and related his own recent experiences with chemotherapeutical agents.

## ULTRA-VIOLET RAY THERAPY.

AT a meeting of the Forfarshire Medical Association at University College, Dundee, on February 16th, the President, Dr. R. C. BUIST, in the chair, Dr. G. H. S. MILLN opened a discussion on heliotherapy.

Dr. Millin first surveyed briefly the history of heliotherapy, and then gave a short account of the general properties and physiological effects of the ultra-violet rays. Describing the commoner modes of production of the rays, he said that those from the tungsten arc were probably the best for light treatment. The dosage depended on the patient, on the lamp, and on the distance of the light from the skin. The susceptibility of patients could be tested by exposing small areas of skin to various doses, and determining the dose required to produce erythema. He believed that it was best to begin with just under an erythema dose, and then to increase it gradually until eventually a good brown pigmentation was acquired. The effects were those of an ideal tonic. Remarkable results were obtained in those patients who, while never well, yet showed no definite sign of disease. Ultra-violet radiation was also one of the most potent weapons that the dermatologist possessed. Combined with $x$ rays he had found it of great value in sycosis. In carbuncles and in furunculosis the results of ultra-violet radiation were almost uncanny, but psoriasis did better with $x$-ray treatment. In the case of tuberculosis of the skin $x$ rays had now been practically discarded for ultra-violet rays, but caution was necessary since vascular dilatation round foci in the lungs might lead to sudden haemorrhage. In rickets, ultra-violet treatment, together with proper feeding, exerted a great influence. In bronchitis and asthma the results were striking. Tuberculous glands without softening were much benefited, and definite improvement followed when sinuses were present. In fibrositis and allied conditions great success was obtained by a more drastic application, a fairly sharp reaction being aimed at. Claims were being made for ultra-violet rays in almost all diseases, but it would be well to see that this most beneficial form of treatment did not fall into disrepute through exaggerated statements.

Dr. J. HUNTER discussed the use of ultra-violet rays in the treatment of tuberculosis, and described the methods employed and the results obtained in three institutions in Dundee. He emphasized the point that this potent agent must be used with caution in the treatment of tuberculosis, or a latent lung focus might be roused with disastrous results. He favoured the open carbon arc. The best results were produced by general radiation; erythema and pigmentation should not be produced. Good results were obtained in the case of the pre-tuberculous child. Abdominal tuberculosis generally did well, but in tubercle of bones, joints, and spine the effects were not good. He had used the rays carefully and under rigid rules in lung cases in a moderate state of activity. No bad results had been found so far, but he could not say that good results had been obtained. There might be general improvement, but he had found no improvement in the local lesion.

Dr. J. B. MACDONALD read notes on six months of sunlight lamp work in Dundee Eastern Hospital. With the mercury vapour lamp he had obtained marked improvement in marasmus and rickets. Varicose ulcers as a rule did well. Among the cases which appeared to have benefited, and of which notes were read, were rheumatoid arthritis, chorea, epilepsy, and mental depression.

Dr. JOHN KINNEAR remarked on the similarities in causation and treatment between tubercle and rickets. He suggested that ultra-violet radiation of cod-liver oil might be tried in tubercle as well as in rickets. He reported a case of summer eruption due to sunlight; it was cured by small doses of ultra-violet rays.

Dr. ROGERS agreed that great improvement followed the use of the rays in rickets. Herpes zoster was benefited, and excellent results were obtained in erysipelas. He had found the treatment useful in marasmus and as a tonic after pneumonia.

Dr. A. R. MOODIE discussed the applications of heliotherapy in ophthalmology. Many conditions, such as chronic blepharitis, trachoma, and marginal ulcers, did well under this treatment, but interstitial keratitis did not respond. Local phototherapy to the eye was not without danger and should be used only by an ophthalmologist with a thorough knowledge of ultra-violet rays.

The PRESIDENT said that the discussion showed that while the method was very attractive from an empirical point of view, it was from the scientific standpoint a mere infant and was open to the serious risk of improper exploitation.

## HEART DISEASE AND PREGNANCY.

AT a meeting of the Midland Obstetrical and Gynaecological Society on February 8th, the President, Mr. FURNEAUX JORDAN, in the chair, a joint discussion on heart disease and pregnancy was opened by Dr. J. G. EMANUEL (Birmingham).

Dr. Emanuel mentioned the great diversity of opinion as to the seriousness of heart disease in pregnancy, the mortality rate being variously stated from 3 per cent. to over 60 per cent. The only form of heart disease likely to affect cardiac efficiency during the child-bearing age was rheumatic heart disease, and mitral stenosis, with or without aortic disease, was the commonest form. The incidence of rheumatic heart disease in pregnant women was roughly 1 per cent. The cardiac output in cubic centimetres per minute during pregnancy had been found by experiments in animals to be increased by one-third to one-half the output before pregnancy; while the reserve power of the normal heart was able to meet this extra load, the damaged heart was liable to fail. There was no evidence of hypertrophy of the heart or of increased blood pressure during normal pregnancy. Even were it possible to estimate mathematically the reserve power of the heart by exercise tolerance tests, this alone would not indicate the effect of pregnancy on a damaged heart. Such an estimate would only give a measure of the mechanical strain the heart was able to stand, whereas cardiac failure might also be brought about by unpredictable factors such as an intercurrent infection, including the common cold, influenza, and endocarditis, the onset of auricular fibrillation, the occurrence of embolism, difficult labour, puerperal infection, and the toxaemias of pregnancy. Rhythm and the size of the heart were the most important guides in prognosis. Sinus arrhythmia and extra-systoles were of no importance, but auricular fibrillation was a bar to pregnancy. If the heart was not enlarged the risk of mitral disease was small, but the risk increased with the degree of enlargement of the heart, and these facts were well supported by the statistics of the late Dr. G. H. Hunt in the *Guy's Hospital Reports* for April, 1926. While it was difficult to say in what cases of heart disease pregnancy was comparatively safe, it must be clearly recognized that pregnancy and repeated pregnancies were possible without ill effects in women with rheumatic hearts. A woman with cardiac disease, but no symptoms of diminished reserve power, might be allowed to become pregnant, but when a woman with heart disease had shown objective evidence of cardiac failure, pregnancy must be avoided. If signs of cardiac failure supervened during pregnancy the patient must be treated as a case of heart failure, and by the same methods as though non-pregnant. Cardiac failure might occur after delivery, showing that emptying of the uterus was no treatment for a failing heart. Only when the cardiac failure had been successfully combated should interference with the pregnancy be considered, and this question would

be greatly influenced by the date of pregnancy, the financial position of the patient, and her ability to obey instructions. If the cardiac failure occurred early in pregnancy induction of abortion was required, but if it occurred in the later months, and provided that strict supervision and suitable treatment were possible, the delivery of a living child by Caesarean section followed by sterilization should be aimed at.

Dr. F. EDGE recalled the death of a woman with mitral stenosis during the second stage of labour which he reported in 1890. In those days Caesarean section and induction of premature labour were comparatively risky procedures, and the method then employed in heart disease was to evacuate the uterus in the early months or to help labour by forceps or version under an anaesthetic in the later months of pregnancy. That the heart was adversely affected by pregnancy was especially shown by the congestion at the bases of the lungs, the oedema of the limbs, and the varicosity of the veins. In a case of heart disease with an evident defect in compensation the patient should be advised against marriage; if she was married contraceptive measures might be legitimately ordered and taught. When pregnancy occurred with a defective cardiac condition the simplest means of combining evacuation and sterilization was a subtotal hysterectomy with preservation of the ovaries. This method assured the patient against pregnancy, and enabled happy married life to be continued. At this stage it was an easy and uncomplicated operation. During the later months, as soon as the child was viable, Caesarean section under a general or spinal anaesthetic should be performed. Induction of premature labour was not advisable in these cardiac conditions except in the most favourable cases. A competent cardiologist should have charge of these patients, and on his direction the obstetrician should act according to the duration of the pregnancy.

Mr. CHRISTOPHER MARTIN raised the question whether a woman with organic heart disease and good compensation should be allowed to run the risk of pregnancy. He thought that the danger of failure of compensation was so serious that in most cases it should not be permitted. The patient should be told the danger, and if she decided to run the risk the responsibility was hers. If it was ever justifiable to advise methods of contraception it could be approved in such cases as these. Though many cardiac patients passed safely through pregnancy and labour, certainty of this was not possible. In dealing with patients with definite organic heart disease in the first half of pregnancy, while there might be no present signs of compensation breaking down, yet they could not answer for the latter half of pregnancy. Some patients passed through the whole course of pregnancy and the strain of labour without any difficulty, but the majority of cases he had seen did not do so. Commencing failure called for intervention, but in the absence of such signs it was permissible to treat the case medically and wait for danger signals, though it must be remembered that these might come on without warning and active measures be taken too late. The more advanced the pregnancy the more risky was intervention, especially after failure of compensation. Treatment of patients with organic heart disease in the latter half of pregnancy depended on the general condition. If compensation was failing there should be no long wait before intervening; if it was good then it was justifiable to wait till near full term in order to give the child a fair chance of life. In the first half of pregnancy abortion was best induced by inserting one or two solid rubber bougies about the diameter of a lead pencil into the uterus. They were better and safer than the gum-elastic catheter often advised, since they could be boiled. No anaesthetic was required. The vagina was cleansed, disinfected with tincture of iodine, the cervix drawn down with volsella, and the perineum pulled back with a speculum. It was now easy to insert the bougie without letting it touch any part of the vaginal wall. Mr. Martin usually inserted one bougie four or five inches into the uterus, and tried to pass it between the ovum and the uterine wall without rupturing the membranes. In from twenty-four to forty-eight hours as a rule the uterus emptied itself. In some cases ovum forceps and the flushing curette might be required. In the latter half of pregnancy labour might be induced by inserting similar but larger solid rubber bougies, about half an inch in diameter. These were sterilized by boiling, and inserted by the same method as the smaller ones. It was sometimes necessary to dilate the cervix first with metal dilators (modified Hegar's dilators) in order to insert the rubber bougie. After the eighth month, and with a good prospect of the child surviving, the best line of treatment was Caesarean section, performed for choice under spinal anaesthesia. A woman with compensated organic heart disease who had safely gone through a labour at or near the full time should be advised to avoid a second pregnancy. If in such a case a Caesarean section was performed the Fallopian tubes should be tied in order to prevent further conception.

Dr. K. D. WILKINSON (Birmingham) said that they were dealing with women between the ages of 20 and 45 whose heart disease was the result of rheumatism. The commonest valvular lesion was mitral stenosis, which resulted from prolonged rheumatic infection and was often associated with damage of the heart muscle and kidneys. No woman who had once had heart failure should risk pregnancy. No woman with auricular fibrillation or heart-block, or history of rheumatism, or considerable cardiac enlargement, with or without valvular disease, should be allowed to become pregnant. On the other hand, valvular disease of the heart did not invariably forbid pregnancy, and pregnancy was permissible when the damaged valve was in a stationary condition and of long standing, if the response of the heart was good, if there was little or no enlargement, if the excitability of the heart was not raised, and if the rhythm was normal. It might also be allowed in aortic regurgitation where the arterial pressures were approximately normal, and in mitral stenosis if the presystolic murmur was short, the pulse volume good, and there was no enlargement of the liver or oedema of the lungs. When a woman with heart disease became pregnant her social condition was very important in determining what steps should be taken, since it was obvious that a woman in good circumstances could rest and adopt the treatment advised, when her poorer neighbour was unable to do so. The first child was often the most difficult, both during pregnancy and at labour, yet, on the other hand, the first child was the most desired. The risk to the child was greatly increased by heart failure in the mother, and the risk to the mother was not only increased by pregnancy, but also by the necessary care of the child, which was the mother's duty, at least among the poorer classes, for a year or more after birth. These cases should be seen as soon as possible, diagnosis should be made early, and a settled opinion reached as to the treatment. When the heart had failed, the failure must be treated first and then the pregnancy. Dr. Wilkinson preferred delivery by Caesarean section because a short anaesthesia added little to the danger, the fatigue of labour was avoided, plethora could be minimized, sterilization was possible, and the time of operation could be accurately selected, thus avoiding the tedious last month of pregnancy. During pregnancy there was extra blood to be distributed throughout the body and there were various disturbances which were normal in pregnancy. Sooner or later a woman without any heart disease showed some dyspnoea and a lessened physical capacity for exercise. Often the presence of varicose veins or oedema suggested pelvic pressure, and these signs were much more common and much more serious when there was defective cardiac reserve. Pregnancy was cumulative in its effects, and not only did the cardiac work increase but the metabolism of the whole body was increased as the gestation advanced. Because of the raised diaphragm, respiration became less efficient, and to these must be added the effects of labour. His experience had convinced him that pregnancy had a harmful effect upon a damaged heart. In many cases it accelerated the final failure of the heart, while in all cases the heart afterwards was not quite so good as it was before. Mitral stenosis appeared to him the most serious lesion, for he had now seen eight deaths from acute pulmonary oedema in women with mitral stenosis, all of which occurred during or immediately after labour.

Professor LAURENCE BALL said that when a woman with heart disease became pregnant they had to attempt to estimate the reserve power of the heart, and to consider whether it was adequate to meet the unusual stress which would shortly be imposed upon it. The medical question could not be considered apart from the obstetrical; the probability or otherwise of an easy labour had obviously an important bearing, but unfortunately both factors could only be estimated roughly. A single examination of the circulation in these cases was entirely unsatisfactory; the heart required careful supervision throughout the duration of pregnancy. They were to some extent handicapped by inadequate knowledge of the physiological changes which occurred in the circulatory organs during pregnancy and in labour. During pregnancy for various reasons the heart was called upon to do extra work; there was thus normally a dyspnoea on effort in the later months. When estimating the reserve power of the heart early in pregnancy it must be remembered that the field of response to effort would be diminished later, and that only a part of the reserve found at an early stage would be available to meet the stress of labour. He had never seen pregnancy associated with heart disease of purely vascular origin, arterio-sclerotic or syphilitic. In cases of renal disease with cardiac enlargement the renal element was more important than the cardiac from the obstetric point of view. Irregularity of the heart due to extra-systole occurring apart from signs of organic disease would not interfere with a normal pregnancy and labour. He had seen a case of Graves's disease in which all the symptoms, including tachycardia, became aggravated during pregnancy, and it was considered advisable to terminate the pregnancy at an early stage. In one case of paroxysmal tachycardia of undetermined nature the paroxysms were severe and prolonged, and associated with crepitations at the bases of the lungs, and again it was considered advisable to terminate the pregnancy. Recently, however, he had seen a woman who had suffered for over twenty years from paroxysmal tachycardia and had borne two children without difficulty. While such conditions as these were relatively rare, rheumatic disease was common, and the most frequently occurring lesion was mitral stenosis. In each case they must attempt to estimate the reserve force of the heart, bearing in mind what the effects of the stress of the later months of pregnancy, of labour, and the puerperium were likely to be. The significance of murmurs must be considered and the size of the heart noted; the pressure, rhythm, and rate of the pulse, the response of the patient to effort, the presence of cyanosis, oedema, albuminuria or swelling of the liver, and the occurrence of persisting crepitations at the bases of the lungs demanded consideration. In a case in which the systolic murmur of mitral regurgitation was present the cardiac enlargement was inconsiderable, the cardiac rhythm was regular, there was no cyanosis, and the patient's response to effort was good, the pregnancy should proceed to a natural termination. Pregnancy was dangerous in the case of a young patient pregnant for the first time if she had poor general physical development and a history of repeated manifestations of rheumatic infection in childhood, with the murmur of mitral regurgitation, a much enlarged heart, cyanosis, and poor response to effort. When the apical murmur was presystolic in time, with or without a systolic murmur, the rhythm was regular, cardiac enlargement inconsiderable, cyanosis absent or minimal, and the response to effort good, the signs indicated an early stage of mitral stenosis, and such a patient might be expected to bear her child without harm. In a more advanced stage of mitral stenosis the patient was definitely cyanosed, there was dyspnoea on effort and evident cardiac enlargement. On auscultation at the apex, in addition to a presystolic murmur, there was a long diastolic rumble, and the second sound at the pulmonary area was accentuated. Such a patient frequently gave a history of haemoptysis, not in itself a serious matter; of much greater significance was the presence of persisting crepitations at the bases of the lungs, and especially if associated with impairment of resonance and weakness of breath sounds. This group presented the greatest difficulty. If such signs were found at an early stage of pregnancy, Professor Ball thought termination of the pregnancy was always justifiable, but they often appeared late in pregnancy. In determining the course of action at this stage, especially in the case of women of the working class who had usually been up and about until the time of admission to hospital, in all but the urgent cases it was useful to try the effect of rest in bed upon the symptoms. He had seen several patients in whom symptoms of serious cardiac failure had improved with rest in bed to such a degree as to allow of spontaneous labour or Caesarean section at or near term. The danger of allowing such cases to proceed to term lay in the risk of a rapid development of pulmonary oedema. Increasing cyanosis and an upward spread of crepitations from the bases of the lungs were ominous signs. From the obstetric point of view, and as regards the immediate future of the patient, he had not observed any essential difference between those cases of mitral stenosis in which the heart failed with fibrillation and those in which it failed with a regular rhythm. If fibrillation was found early in pregnancy, generally the pregnancy should be terminated; if it occurred late, the other procedures previously mentioned were permissible. He thought he had seen more favourable results in failure with fibrillation late in pregnancy than in failure with a regular rhythm, owing to the better response to digitalis. He had seen three cases of the association of pregnancy with aortic regurgitation. In all these mitral lesions were present as well, and in two the mitral lesion appeared to be the more important; in none of them was the pregnancy allowed to proceed. In the more definitely aortic case there was great dyspnoea, and the character of the pulses and size of the heart pointed to a severe incompetence; this patient did not long survive the evacuation of the uterus. The termination of the pregnancy in these cardiac patients did not leave the heart as it was before conception. Prolonged rest and continued medical treatment were required, and there was a great tendency to permanent impairment. He had known patients too often come well through the delivery only to break down again on the premature resumption of household duties.

## JAMES MACKENZIE INSTITUTE.

### *Haemoptysis.*

AT a meeting on February 8th Dr. W. B. MACTIER dealt with the problems of blood spitting. He reviewed first the more common causes of haemoptysis—namely, phthisis and mitral stenosis—and gave details of two cases from the Institute records, in both of which the haemoptysis was often repeated, to exemplify its occurrence in mitral stenosis. Dealing with the rarer causes, the lecturer included in this group pneumonia, infarct, and bronchiectasis, describing a case of unresolved pneumonia complicated by infarction of the lung, and also a case of bronchiectasis, to illustrate its occurrence in these conditions. He specially directed attention to an interesting group of cases of haemoptysis from the records, in which, after prolonged observation, it was still not possible to be certain of the cause of the condition. All the patients had been carefully followed up since the haemoptysis, both clinically and by *x*-ray examinations, but nothing had come to light to clarify the diagnosis. In regard to the significance of haemoptysis, he indicated the great difficulty of correctly assessing this symptom in apparently healthy people, the most pressing question in the minds of both patient and doctor being whether or not the condition afforded evidence of phthisis. The lecturer drew attention to the difference of opinion among clinicians in regard to this, and mentioned that some authorities still asserted that probably all cases of haemoptysis were tuberculous in origin. Gee had suggested the possibility of recurrent haemoptysis being due to the presence of a small cavity "perhaps no bigger than a cherry." Dr. MacTier reported two cases which appeared to be of this nature; in neither had the tubercle bacillus been found on repeated examination. Prognosis in haemoptysis was primarily a question of diagnosis, the most difficult cases being those of healthy young adults who showed no physical signs of disease. The importance of continuing accurate observations of the weight, the evening temperature, and the sputum over a prolonged period was emphasized.

# Reviews.

## PLANT POISONS AND STIMULANTS.

*Inorganic Plant Poisons and Stimulants*,[1] by Dr. WINIFRED E. BRENCHLEY of the Rothamsted Experimental Station, first appeared in 1915, and in the second edition, which has just been published, the scope of the work has not been altered, though the text has been brought up to date by the inclusion of recent research work.

The action on plants of salts of copper, zinc, arsenic, boron, and manganese is described in detail. The facts are, of course, of great practical importance to farmers for their guidance in the use of chemical manures and fungicides, but it is of general interest to physiologists also, since many of the results show important analogies to effects observed in animal physiology. For example, a solution of copper in pure water exerts a powerful oligodynamic toxic action, and one part per million of copper sulphate stops all growth of barley, but if neutral salts are present ten times this concentration is needed to produce the same effect.

Even more interesting is the evidence that traces of boron and manganese are necessary for the normal development of plants. The quantities necessary are extremely small, for a concentration of one in one hundred million of manganese can produce a distinct stimulant action in the growth of barley. The similarity between these effects and those of iodine lack on vertebrates is at once obvious.

It is instructive to note that the author's careful analysis of the evidence shows that the action of these metals on plants does not really support the so-called law which states that substances which produce a toxic action in high concentrations will also produce a stimulant action in low concentrations. It is true that traces of boron and manganese are essential for the normal growth of many plants and that these substances are toxic in high concentrations, but, on the other hand, copper, arsenic, and zinc in most cases are toxic in all concentrations at which they produce any measurable action.

These examples show how many points of interest to general physiology are brought out in Dr. Brenchley's work.

## INDUSTRIAL MEDICINE.

THE first volume of a new German treatise of social hygiene[2] was reviewed in our columns on November 6th, 1926 (p. 838); the second volume is wholly devoted to industrial medicine. Special attention is given to clinical aspects which, the editors remark, have not received adequate notice in German medical literature.

The first two hundred pages of the volume are on general questions. In this section the article of most interest to the English reader is Brezina's discussion of Taylor's system ("Scientific Management"), hours of labour, rest pauses, and night work. There follows a short and not very satisfactory statistical article by Koelsch; it is not very satisfactory because the best German statistical material dealing with sickness rates, that of the Leipzig Insurance Bureaux, is now almost a quarter of a century old, but must still do duty as no similarly detailed analysis has since been prepared. However, no Englishman can cast a stone, because nothing so detailed has ever been done in this country. The next 140 pages are devoted to industrial poisoning. Physical agents are then examined; Mager's section on caisson disease—a subject to which much attention has been paid by English physiologists—although concise is adequate. We then have a series of articles upon diseases peculiar to or most frequent in particular industries, classified, in the main, anatomically. Mendel's essay on diseases of the nervous system, which discusses also occupational neuroses, is worthy of special mention, and Oppenheim's section on diseases of the skin is very well illustrated. In Koelsch's paper on cancer in occupations there are some interesting notes on the remarkable incidence of cancer of the lung upon the cobalt-arsenic miners of the Schneeberg district of Saxony; how far direct mechanical irritation and how far specific chemical action may be involved are unsolved problems. The volume concludes with a series of articles on the hygienic conditions of the chief industries in Germany. Schürmann's account of coal mining, illustrated by very full statistics of Rhenish-Westphalian coalfields, is particularly valuable. It appears from these tables that the incidence of fatal accidents is much heavier than upon any of the English coalfields, but the classification of workers may be different, and, therefore, the rates may not be comparable.

This should prove a useful textbook for the German hygienist; it contains some articles which can profitably be consulted by a foreigner; we have mentioned some of these, and may say generally that a comparison of the industries which are very important both in Germany and our own country is instructive. An interesting point is that some causes of incapacity which are very important here seem much less so in Germany. Thus telegraphist's cramp, the object of very special consideration here, is only noticed cursorily among a whole series of occupational neuroses, while miner's nystagmus is clearly much less prevalent as an incapacitating illness in German than in British mines. Perhaps both the general social distress in the years immediately following the war, and the fact that by the German law the onus of proof is upon the employee to establish the occupational origin of his incapacity, are factors of etiological importance when we are dealing with disability which has, at least, some psychological element.

Considering the greater length of our industrial history, it would be discreditable to the English medical profession if a foreign textbook were decidedly superior to anything of the kind in English. That is not, we think, the case. The English or American speaking student who is not a specialist need not go beyond works in his own language. This volume will, however, be a useful but—at £2 14s. unbound—rather expensive addition to a reference library.

## THE ALPINE CLIMATE.

DR. PAUL GÖTZ carries on at Arosa an observatory on the lines of that at Davos conducted by Dr. Dorno. He has recently published a book detailing the results: *Das Strahlungsklima von Arosa*.[3] The duration of the sunshine, the total heat radiation of the sun, and the red, green-blue, and ultra-violet radiation are recorded daily; the cadmium photo-electric cell is used for the last. The effect of the transparency of the atmosphere, and of the ozone layer in the very high atmospheric region, are studied, the latter in association with Dr. Dobson of Oxford, who has initiated a world-wide investigation of the influence of this ozone layer on the ultra-violet radiation of the sun. It is this layer which limits the penetration of the shorter wave-lengths—to 2,900 Angström units. The brightness of the sky is also measured at Arosa, and the influence of different aspects on this. In addition to the ordinary meteorological data, wind, temperature, humidity, etc., the cooling power of the air has been studied by means of Leonard Hill's kata-thermometer. As at Davos, the cooling power is found to be very equable, owing to the absence of high wind.

The still cold air of winter, and the warmer breeze air of summer keep up about the same cooling power all the year round. This is of advantage in the treatment of tuberculosis. The high radiant energy and cool, still, dry, and dust-free air of the Alps offer most excellent conditions.

## DISEASES OF THE HEART.

*Auricular Fibrillation*[4] was the subject chosen by Dr. EMANUEL for the Ingleby Lectures delivered at the University of Birmingham in 1925, and they are now published

[1] *Inorganic Plant Poisons and Stimulants.* By Winifred E. Brenchley, D.Sc., F.L.S. Cambridge Agricultural Monographs. Second edition. London: Cambridge University Press. 1927. (6½ × 9½, pp. ix + 134; 21 figures. 10s. 6d. net.)

[2] *Handbuch der Sozialen Hygiene und Gesundheitsfürsorge.* Herausgegeben von A. Gottstein, A. Schlossmann, L. Teleky. Zweiter Band: Gewerbehygiene und Gewerbekrankheiten. Berlin: J. Springer. 1926. (Sup. roy. 8vo, pp. viii + 816; 56 figures. R.M.54.)

[3] *Das Strahlungsklima von Arosa.* Von Dr. F. W. Paul Götz. Berlin: J. Springer. 1926. (6½ × 9½, pp. 110; 31 figures, 69 tables. R.M.8.70.)

[4] *Auricular Fibrillation.* By J. G. Emanuel, B.Sc., M.D., F.R.C.P. Birmingham: Cornish Brothers, Ltd. 1926. (Roy. 8vo, pp. 31; 16 figures. 3s. 6d. net.)

in a book. After a brief historical note the lecturer deals with the essential nature of this disorder of rhythm, and several parts which have been the subject of special observation are discussed in greater detail. The fact that in sinus rhythm all the impulses pass from auricle to ventricle, while in auricular fibrillation only a proportion do so is ascribed to the view that in the latter the impulses themselves are "abnormal" in so far as they arise from auricular muscle fibres and not from the pacemaker. No mention is made of circus movement or of the fact that increase in rate of stimuli attacking the bundle is in itself a cause of functional heart-block. In discussing the onset of auricular fibrillation, the author draws attention to a small group of cases in which reflex vomiting may be induced and can only be controlled by rest in bed or by restoration of sinus rhythm. The effect of toxins on the rate of the ventricle in auricular fibrillation is also discussed and their action in producing slowing of the ventricle rate is compared with the action of digitalis and of organic disease of the bundle, and the effect of all three in fibrillation is contrasted with their action on sinus rhythm. When dealing further with the effects of digitalis, the view is advanced, and supported by experiment,[4] that the earlier effects of digitalis are vagal and the later on the bundle. The lectures provide suggestive reading, particularly in those parts where they differ from commonly accepted views.

During the great war the Surgeon-General of the United States Army issued Circular 21 as a guide to medical officers in the examination of the circulatory system of candidates for military service. Dr. LEROY CRUMMER, professor of medicine at the University of Nebraska, using this as his text, offers in his book the *Clinical Features of Heart Disease*[5] an interpretation of the mechanics of diagnosis for practitioners. Though rather discursive in its style, this book has much to commend it and should prove of value to practitioners in aiding them to assess the significance of the signs and symptoms of heart disease. It contrasts with many modern books on the same subject by reason of the entire absence of illustrations, and this is a natural corollary to a sentence in the text—"Overvaluation of mechanical aids in diagnosis is a general defect of medical thought." In the sections dealing with diagnosis and with treatment the author pays attention to many practical points often overlooked in textbooks. Some of his statements are rather arresting, as when he says that "simple aortic insufficiency in early adult life (not associated with mitral disease) usually develops during a pneumococcal infection and not during acute articular rheumatism"; and again, when he asserts that "cacodylate of sodium is a specific in rheumatic pericarditis." It is an easy book to read and contains many useful hints.

In his essay on *Angina Pectoris*[6] Professor HANS KOHN of Berlin gives a useful historical and critical review of the various hypotheses put forward to explain this condition. The discussion is concerned chiefly with the coronary and aortic hypotheses, and the author brings together a mass of evidence from all departments of medical science and practice for and against these views. As a result of this examination of the writings of previous workers and of his own experience, Professor Kohn comes to the conclusion that angina pectoris is always the result of narrowing of the coronary arteries. He believes that there is only one angina pectoris and that it is a definite disease, an entity, and not only a collection of symptoms. The coronary narrowing, in the great majority of cases, is anatomical (by atheroma, syphilis, etc.), but may, in a few cases, be purely functional and caused by coronary spasm, toxic or nervous in origin. He holds further that even with disease of the vessel wall, spasm gives rise to the attacks. The pain and the sense of oppression (which is but a variety of the pain) arise, and are experienced, in the coronary arteries and in the ischaemic heart muscle. He considers the sense of impending dissolution to be an expression of momentary cardiac failure as a result of the ischaemia, while sudden death occurring in an attack is due to ventricular fibrillation, also a result of insufficient blood supply. The review includes a bibliography of about five hundred references.

[4] *Clinical Features of Heart Disease.* By Leroy Crummer, M.D. Introduction by Emanuel Libman, M.D. London: Henry Kimpton. 1925. (Demy 8vo, pp. xix + 353. 12s. 6d. net.)
[5] *Angina Pectoris.* Von Prof. Dr. Hans Kohn. Ergebnisse der Gesamten Medizin IX. Berlin and Vienna: Urban and Schwarzenberg. 1926. (7¼ × 10¼, pp. 209-276.)

## SIR JAMES CRICHTON-BROWNE'S ESSAYS.

IN *Stray Leaves from a Physician's Portfolio*[7] we welcome a further supply of the products of Sir JAMES CRICHTON-BROWNE's spare moments in a long and observant life. Of these seventeen pleasantly written essays, many touch on medical subjects of general interest, such as "Dreamy mental states," "Poisons and poisoning," "Brain rest" (dealing with sleep), "Brain building" (with wise remarks on food), "Light and sanitation," and "Claret in Scotland," which contains also information about whisky. In several of the essays the life of students in the Scottish universities in the past is described, and a comparison between the less hardy condition of to-day indicated. Carlyle's experiences as a student form the subject of one essay and Craigenputtock of another. Biography is further represented by the story of Thomas Young's many activities, and by an article contending that Patrick Branwell Brontë has been much maligned and misunderstood. "Shakespeare in Scotland" contains much that is interesting, conveyed with a light touch, and showing his influence on the Wizard of the North. The rise of the drama in Scotland is traced, and the opinion is expressed that, in spite of what may be said to the contrary, the genius of that country is essentially dramatic. Among so much that is charming in these papers it is difficult to select one for particular mention, but perhaps that on "The lightening before death"—a quotation from Shakespeare: "How oft have men when at the point of death been merry, which their keepers call 'the lightening before death'"—deserves the palm.

## THE WINE TRADE.

IN *Bottlescrew Days*[8] Mr. SIMON contributes another volume to the list of his publications on the subject which he has made his own. The title needs some explanation. The use of corks for stopping the mouths of wine vessels began with the eighteenth century, and at first the cork was made long and tapering so as to leave enough of it protruding from the neck of the bottle to allow a good grip with the fingers so that it could be pulled out. Before that time all wine was on draught in skins, casks, or jars. Then some genius had the bright idea of using short corks cut flush with the mouth of the bottle and protected by a layer of wax, and to extract these corks the bottlescrew, now known as a corkscrew, was invented. Like some other great inventions, this one is anonymous. The introduction of the cork and its screw enabled wine to be matured in bottle as soon as the bottles were made of a shape that allowed them to be laid down in the cellar. Much French wine was drunk in England in the days when Guienne belonged to the English Crown, and the traffic between Bordeaux and such privileged ports as Winchelsea was associated with the development of the British merchant navy. The huge cask or "tun" containing four hogsheads, or 252 gallons, gave its name to the "ton" of shipping measurement, for the size of a ship was gauged by the number of these great wine casks that she could carry. In Elizabethan times wines from Spain and its dependencies became popular, and Sherris (Xerez) sack and Canary (or Palm) sack figure largely in the drama of that period. French wines, however, seem to have become popular again in the seventeenth century, and despite tariffs and the long wars with France they never wholly lost their vogue, despite the Methuen Treaty of 1703, which was falsely accused of undermining the morale of Scotland.

> "Firm and erect the Caledonian stood,
> Old was his mutton and his claret good.
> 'Let him drink port,' the English statesman cried!
> He took the poison and his spirit died."

[7] *Stray Leaves from a Physician's Portfolio.* By James Crichton-Browne, M.D., LL.D., F.R.S. London: Hodder and Stoughton. (8¼ × 5¾, pp. viii + 351. 12s. 6d.)
[8] *Bottlescrew Days.* By André L. Simon, F.R.Hist.S. London: Duckworth and Co. 1926. (Demy 8vo, pp. 273; 46 plates. 21s. net.)

But the reputed death of the Scots spirit was, like that of Mark Twain, "greatly exaggerated." Perhaps the *perfervidum ingenium* was saved by whisky.

Mr. Simon is an enthusiastic admirer of French wines and has little to say in favour of those from other countries. Port, the rival of French wines for so many years, has few merits in his eyes. We hope that we do not misrepresent him in saying that he seems to think that good wine, and especially good French wine, is incapable of doing anybody harm. But the use of gin, which was encouraged at first in England because it was an indigenous production, is unsparingly condemned by him. We doubt very much whether the gin-drinking classes had ever been regular consumers of wine. Beer had been the popular beverage for centuries, and it was by favouring its consumption that the authorities tried to combat the evil habit of gin-drinking. In his condemnation of ardent spirits we are at one with the author, but we cannot share the conviction expressed in his dedication wherein drunkenness and teetotalism are referred to as evils apparently of equal magnitude, "which every fair-minded and temperate man cannot help deploring." While we would not "rob a poor man of his beer," we have yet to learn that total abstinence ever did anyone any harm, except the vendors of alcoholic liquor. Mr. Simon gives us a great deal of illuminating information as to the habits of the well-to-do in the eighteenth century, gathered from such documents as the wine accounts of the Barber Surgeons' Company of London, and of some great noblemen such as the Earl of Bristol. It is interesting to note the occurrence in such lists more than two hundred years ago of the names of vineyards such as Château Margaux and others which are still synonymous with excellence and popularity.

This book is profusely illustrated with forty-six plates many of them reproductions of old caricatures, others of excellent photographs of old wine glasses, bottles, and labels, besides reproductions in the text of bills and invoices. Among these latter is a trade card which has a peculiar interest for us. It is that of "John Lister Son-in-law and succefsor to the late Stephen Jackson, deceased, at the Old Wine and Brandy Vaults opposite Tokenhouse Yard," etc. This was the father of Joseph Jackson Lister, who carried on the business after his father's death, but whose heart was in the study of optics and who made most important improvements in microscopic object-glasses. His son Joseph was the great reformer of surgery who became Lord Lister. The great surgeon and man of science did not do credit to his father and grandfather in the matter of wine, if we may believe the story told of the unsparing denunciation of his claret by a tactless French guest in Glasgow.

## NOTES ON BOOKS.

A SMALL *Handbook of Medical Electricity and Radiology*,[9] by Dr. J. R. RIDDELL, is stated in the preface to be written to inform the student as to the uses, and the indications for the use, of the many pieces of apparatus usually found in the electrical department of a general hospital. Into some two hundred and fifty pages of fairly large print, but small size, are compressed nine chapters and an index, together with about one hundred and ten illustrations. The subjects of the chapters are electrotherapeutics, the examination of the electrical reactions of nerves and muscles, Roentgen-ray production and control, the action of $x$ rays on living tissues, $x$ rays in diagnosis, $x$ rays in treatment, radium, light, and carbon dioxide snow. The book is a well written example of its type, and it is rather extraordinary how much the author has been able to include and to compress into such a small space. Obviously a great deal of detail has of necessity been omitted. The eighty-seven pages allotted to regional examinations by means of $x$ rays not only contain a vast amount of information, covering almost the whole ground of $x$-ray diagnostic work, but also many good illustrations. This chapter alone quite fulfils the intentions of the author as laid down in the preface. The book is well presented, the text is easily read and understood, and the illustrations are better than is usual in books of this kind. It can be recommended to students as a guide to the possibilities of an $x$-ray and electrotherapeutic department.

In the evening of life—at all events of a well spent life—a man tends naturally to become reminiscent. He reviews events in which he has taken part, and if he is of balanced judgement his mind recalls, not only his successes, but also his failures. The recollection of the latter need not be too bitter, for he knows that it is human to err; and if he feels called upon to record his experiences for the benefit of younger colleagues he is buoyed up by the hope that even his failures may not have been in vain. So it would seem to be with Dr. TYSON of Folkestone, who has recently published a small book of *Medical Notes*,[10] dedicated to his colleagues at the Royal Victoria Hospital. In fifty little chapters Dr. Tyson sets forth thoughts that have occurred to him on various problems in medical practice, and his words seem to flow gently from his pen, in defence of wise and balanced conservatism. Thus he does not despise the humble leech in the relief of heart congestion, and his list of valuable drugs is headed by magnesium sulphate. He finds that mercury still holds its own in the treatment of syphilis, and he has discovered that the drug, in the form of blue pill, has a soporific action in the insomnia of certain cases indefinitely described as biliousness. Dr. Tyson notes the difficulty at times of dissociating functional and organic disease. He regrets the lack of institutions where the general practitioner may keep early mental cases under observation on reasonable terms. He urges the need for instructing students in the use of as many of the instruments of diagnosis as possible, while recognizing that diagnosis should only be made after due assessment of the proportionate value of symptoms; and he pleads with the surgeon to remember the importance of treatment after operation, and to avoid, as far as possible, lightning diagnosis. In his final chapters Dr. Tyson discourses of the patient, what he shall be told, how he can assist us in his future treatment, how he should not be forgotten in treating his disease, whether he should be advised to remain long in bed, and when he should retire from his work.

There is good ground for believing that the number of members of the medical profession who take a lively interest in archaeology, using that term in its widest sense, is very considerable, and some have made themselves authorities on certain departments of field archaeology. It is probable, therefore, that numerous will be the medical readers of a new quarterly, *Antiquity*, for, judging by its first number, just issued, it will give a large part of its space to the results of field work. The present position of one subject to which medical men, including Dr. Williams-Freeman and the two Drs. Eliot Curwen, have contributed a good deal is stated in a paper on "Some Prehistoric ways" by Dr. R. C. C. Clay, F.S.A. The value of air photography in showing up old walls and paths now covered by ground under cultivation is well illustrated in one of the papers. The annual subscription is £1, which should be sent to the editor, Mr. O. G. S. Crawford, Nursling, Southampton. The first number has been very well printed by John Bellows of Gloucester, England, from whom single copies may be obtained (price 5s. 6d.).

The *Pharmacopoeia of the City of London Hospital for Diseases of the Heart and Lungs*, Victoria Park, contains three sections devoted respectively to medicaments for internal use; preparations for the throat, nose, larynx, eye, and ear; and external applications. An appendix contains instructions to sisters for the nursing of different types of patient, the special preparation necessary for $x$-ray examination, and the usual tables. The small volume (London: H. K. Lewis, 3s. 6d.) is interleaved with blank pages, and is of convenient size for the pocket.

The fifty-fourth annual issue of *Willing's Press Guide*[11] follows the lines of its predecessors, and is a useful work of reference. It contains an alphabetical list of newspapers and periodicals published in the United Kingdom, with particulars of the year of establishment, politics (if any), date of publication, price, and the publisher's name and address. An interesting list is provided of the existing newspapers and periodicals which originated in the seventeenth and eighteenth centuries. Lists are also given of reporting, telegraphing, and news agencies, and the principal newspapers published in the Dominions and in foreign countries. The present issue retains all the valuable features which have rendered past editions so popular.

[9] *Handbook of Medical Electricity and Radiology.* By James R. Riddell, F.R.F.P.S. Edinburgh: E. and S. Livingstone. 1926. (Cr. 8vo, pp. xv + 239; 109 figures. 8s. 6d. net.)

[10] *Medical Notes.* By W. J. Tyson, M.D., F.R.C.P., F.R.C.S. London: H. K. Lewis and Co., Ltd. 1926. (Cr. 8vo, pp. xi + 64. 2s. 6d. net.)

[11] *Willing's Press Guide, 1927.* Fifty-fourth year. London: J. Willing, Ltd. 1927. (Demy 8vo, pp. xii + 485. 2s. 6d.)

# NINETY-FIFTH ANNUAL MEETING
## of the
# British Medical Association,
## EDINBURGH, 1927.

THE ninety-fifth Annual Meeting of the British Medical Association will be held in Edinburgh this summer under the presidency of Sir Robert Philip, M.D., LL.D., honorary physician to the King in Scotland, who will deliver his address to the Association on the evening of Tuesday, July 19th. The scientific and clinical work of the meeting will occupy, as usual, the three following days, and on this occasion it will be divided among twenty-one Sections. The names of the officers of Sections and other preliminary announcements are published in the SUPPLEMENT this week; the full programme of scientific business and further details of the arrangements for the Annual Meeting will appear in later issues. The Annual Representative Meeting, for the transaction of medico-political business, will begin on Friday, July 15th. On the last day of the meeting (Saturday, July 23rd) there will be excursions to places of interest in the neighbourhood. We print below the third of a series of descriptive and historical notes on the Scottish metropolis and its relations with the science and practice of medicine. The first article, published on December 4th, 1926, dealt with old Edinburgh and the beginning of the Edinburgh Medical School; the second, on January 1st, with the Medical School from 1726 to the middle of the nineteenth century.

It has been decided to make the Edinburgh celebrations of the centenary of Lord Lister's birth coincide with the Annual Meeting of the British Medical Association. A book dedicated to Lister's life and writings is being prepared for the occasion, and throughout the week a museum of Lister relics will be on view in the Upper Library of the old University. On Wednesday, July 20th, at 8 p.m., a public meeting will be held in the McEwan Hall, with the Earl of Balfour, K.G., in the chair, when short commemorative addresses will be delivered.

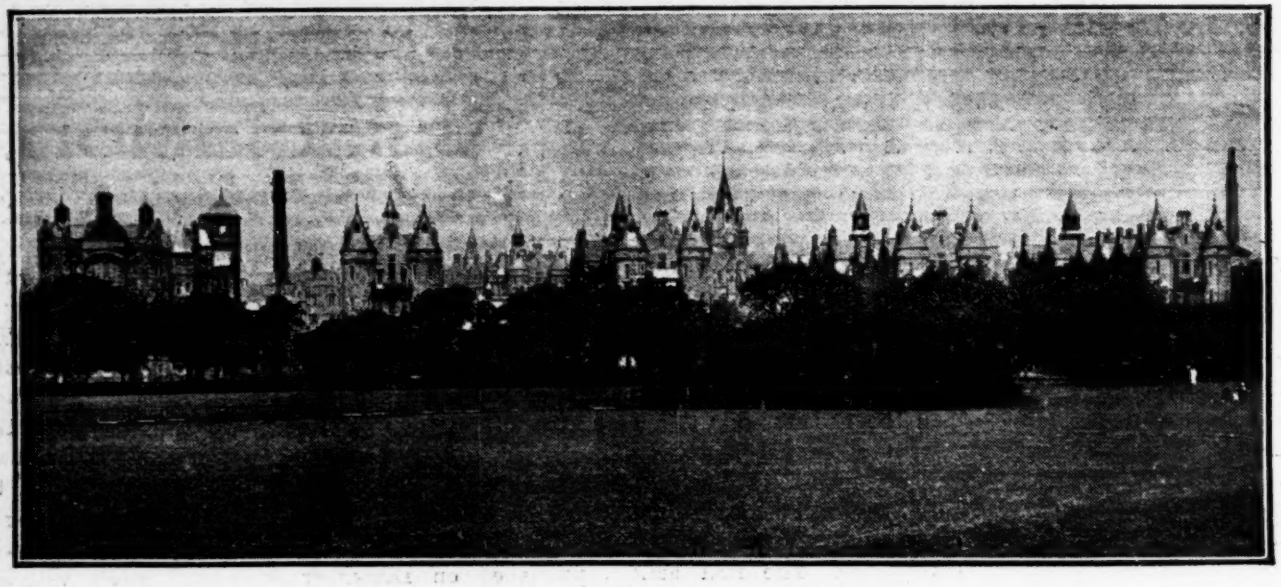
## EDINBURGH MEDICAL INSTITUTIONS.

### THE ROYAL INFIRMARY OF EDINBURGH.

THE Royal Infirmary of Edinburgh owes its origin to the Royal College of Physicians, which was founded in 1681, largely by the influence of Sir Robert Sibbald, in association with other eminent physicians of the city, by whom the first steps were also taken for the foundation of a complete medical school at Edinburgh.[1] This College from its earliest days interested itself in the care of the sick poor, and at its third meeting, on February 10th, 1682, two physicians were appointed "to serve the poor of the city and suburbs." Advice and medicines were first distributed to the poor at the Hall of the physicians, but in 1725 the College proposed the foundation of a building where the sick could be received. In 1726 the minutes of the College mention that subscriptions had already been set on foot with "pretty good success," and the Fellows of the College were now joined in their scheme by the members of the Incorporation of Surgeons as well as receiving substantial encouragement from charitable people in many quarters. It was considered that the sum of £2,000 was the smallest which would suffice for this purpose, and this sum having been speedily collected, the committee charged with the object decided to hire a small house for receiving sick poor out of the annual proceeds of the capital sum, and at the same time appointed twenty managers to control it. This "small hired house" stood at the head of Robertson's Close and provided accommodation for six patients. It was formally opened on August 6th, 1729. Some time later the managers obtained a Royal Charter from King George II, dated August 25th, 1736, in which the hospital is designated the Royal Infirmary of Edinburgh, and by August 2nd, 1738, the foundation stone of a permanent hospital was ceremoniously laid. This building consisted of a "body with two wings, each of three full storeys and an attic one with garrets in the roof." The body was 210 feet long and each wing extended 70 feet, with a "large theatre where more than 200 students can see operations, and which is also a convenient chapel. Over the theatre a cupola is raised that may occasionally be used as an astronomical observatory, having windows to the different quarters of the hemisphere." The house was designed for 228 sick people "received into separate beds," and on the ground floor there were twelve cells for mad people. Round the hospital was an area of two acres with grass walks for the patients to walk in. The patients previously had had the privilege of walking in the neighbouring Physic Garden of the College, which had

OLD ROYAL INFIRMARY; MEDICAL HOUSE. OPENED DECEMBER, 1741, NOW DEMOLISHED.

[1] See BRITISH MEDICAL JOURNAL, December 4th, 1926, p. 1067.



ROYAL INFIRMARY, EDINBURGH, FROM THE MEADOWS.

been leased in 1724 to Dr. Rutherford and some of his colleagues for the purpose of rearing medicinal plants. The building of this hospital appears to have commended itself to all classes. The Assembly of the Church of Scotland ordered collections to be made at all church doors; benefit nights were given at the theatre; most of the societies in and about Edinburgh sent money; merchants sent presents of timber, stone, and other materials; farmers and carters supplied carriages; and mechanics and labourers gave so many days' work gratis. In addition, the managers dispersed copies of their prospectus in England, Ireland, and the British Plantations, from all of which countries considerable subscriptions were received. In the credit assigned to the founders of the hospital, one of the most active to be recognized was George Drummond, Commissioner of Excise, who held the office of Lord Provost of Edinburgh six times. "His indefatigable labours in procuring bounties, whether money or material, to set the work agoing and his ardent efforts in forwarding it when begun, were amply compensated, as his solicitous wishes were happily gratified, in seeing it completed many years before his death." The labours of this public-spirited and far-seeing man were commemorated by a bust which stands at the entrance to the present Royal Infirmary as well as by a portrait in the board room. Finally the Infirmary was fitted up, and the sick were received into it in December, 1741.

In 1745 and 1746 the affairs of the Infirmary, as well as of the whole country, were thrown into confusion by the Rebellion, and the Infirmary was converted into a general hospital for sick and wounded soldiers, of whom several hundred were attended and dressed by the surgeons. From the commencement of the hospital in 1729 the surgeon apothecaries had not only attended without fee, but each had furnished the medicines necessary out of his own shop. In 1748, however, the managers decided to fit up an apothecary's shop in the institution from which both in-patients and out-patients could be served.

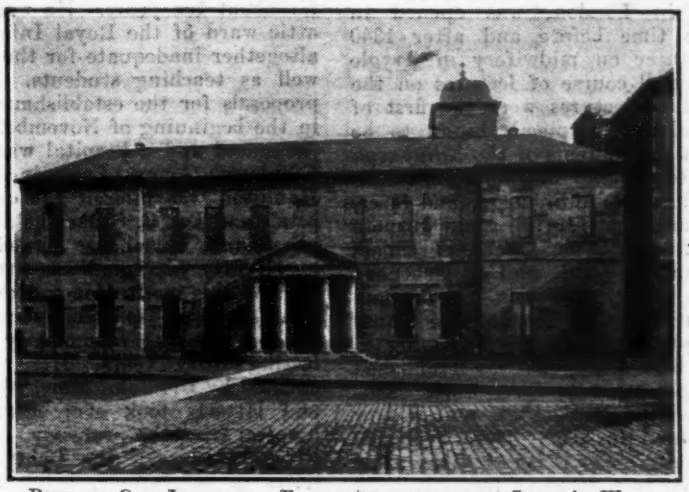
By 1778, when a new appeal was issued, it had been found that the original twelve cells for mad people were unnecessary, and some of them had therefore been converted to other uses. On the upper floor a ward had also been established "for lying-in women, sufficiently separate from the rest of the house, and under the direction of the professor of midwifery." On the attic story and in a remote part of the house "a salivating ward for female patients had also been established containing twelve beds." There was also a small ward with four beds for the same purpose. "This ward was fitted up in consequence of a few female patients, who, being sufferers, not by any fault of their own, but by that of their husbands, or from suckling infected children, had applied to be taken under cure in the hospital." By this time, too, it is recorded that "in the west wing are one cold and two hot baths with their respective dressing-rooms, while in the east wing is a bath for the patients of the house, so constructed that it may be occasionally used either as a cold or a hot bath." The report continues: "those in the west wing are intended for people of the city; no patient in the hospital having at any time admittance to them." These three baths appear to have been the only provision, towards the end of the eighteenth century, by which the inhabitants of Edinburgh could carry out complete ablution otherwise than in a stream or in the sea, and the baths appear to have been a source of considerable revenue to the charitable institution. Another source of revenue was tapped in 1746, when the managers of the Infirmary and of the town's workhouse took a joint lease of the hall where the weekly assemblies for dancing were held. Several ladies of quality and rank undertook to act in turn as directresses of the weekly assemblies, and the profits arising from these brought to the Infirmary a revenue of about £100 per annum.

It is interesting to note that the Royal Infirmary of Edinburgh in the eighteenth century affords an example of the modern movement for the payment of hospital staffs. In January, 1751, the managers elected Dr. David Clark and Dr. Colin Drummond physicians in ordinary to the infirmary, each with a salary of £30. This was to supersede the old arrangement by which each of the Fellows of the College of Physicians had in turn attended the Infirmary for a month, but this arrangement seems again to have been departed from at a later period. For a time also the practice of having paying patients was introduced, and the charge for these was at the rate of 6d. a day. After the peace of 1763 a great number of sick and lamed soldiers presented themselves at the Infirmary, and in the same year Dr. Adam Austin was appointed by the Commander-in-Chief to visit the military wards regularly and to report thereon. Every assistance was given by the managers and staff of the house to Dr. Austin in the execution of these duties.

Excluding the military ward and the wards reserved for special types of case, some sixty beds appear to have been available for ordinary free patients. With these the Infirmary continued for about half a century, but in 1828 the old High School, vacated by the transference of that institution to a site on the Calton Hill, was acquired, and this, along with an intermediate building connecting it with the original Infirmary structure, became the surgical hospital. This part of the old Infirmary is still standing, though the original building of 1741 has long since disappeared. Between 1860 and 1870 much discussion took place as to whether the Royal Infirmary should be rebuilt or whether a new Infirmary should be erected on a different site. The latter alternative was adopted, in great part owing to the advocacy of Professor Syme. The site selected

was that of George Watson's Hospital, between Heriot's Hospital and the Meadows. Here the foundation stone of the present Infirmary buildings was laid on October 13th, 1870. The present Royal Infirmary was opened on October 29th, 1879.

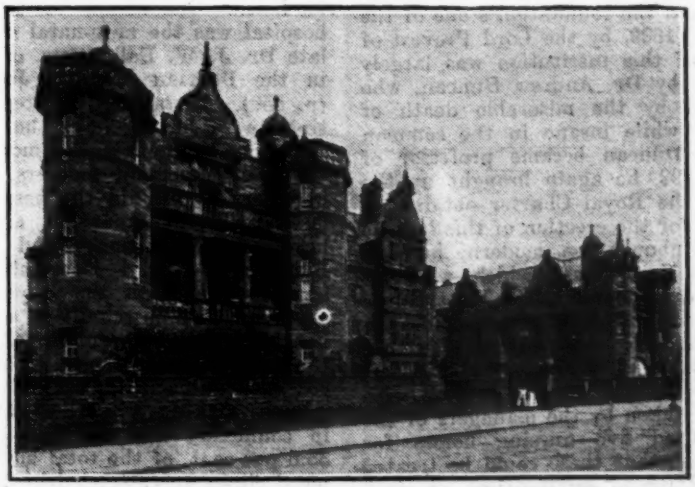
Various changes have taken place in the past two centuries as regards the appointment of physicians and surgeons to the hospital, and the present Infirmary, in the forty-eight years of its existence, has enormously expanded with the introduction of new departments for diseases of the eye, disorders of the ear and throat, radiology, bacteriology, and other special departments and clinics. The present visiting staff numbers sixty-eight, with twenty-six consultants who have served their term of office in the institution. Of the visiting staff, some six attached to special departments are paid as whole-time or part-time officers. With regard to the work of the hospital, in 1926 over 17,000 patients were treated in the wards, while over 56,000 out-patients attended the various departments.



PART OF OLD INFIRMARY, EDINBURGH, CONTAINING LISTER'S WARDS, AND FORMERLY THE HIGH SCHOOL OF EDINBURGH.

During the time that has elapsed since the foundation of the Infirmary nearly two hundred years ago the arrangements for treatment of patients have undergone a gradual evolution. Until the year 1751 all the Fellows of the Royal College of Physicians attended the patients in rotation, but in that year the managers appointed two physicians to the Infirmary at a salary of £30 each. Similarly, all the members of the Incorporation of Surgeons up to 1766 attended the surgical cases in rotation, but in July of that year the managers appointed James Rae, Peter Addis, John Balfour, and Andrew Woods as surgeons to the hospital.

One of the most important developments in the relationship of the Royal Infirmary to the Edinburgh Medical School commenced in the year 1748, when John Rutherford, professor of practice of physic in the University, and grandfather of Sir Walter Scott, obtained permission from the managers to give a course of clinical lectures in the Royal Infirmary. This was perhaps the first course of clinical lectures delivered in this country, and was organized by Rutherford on the model of lectures which he had attended in the hospital at Leyden. Very soon other professors of the medical faculty began to co-operate with Rutherford, and the fame of the clinical teaching at Edinburgh increased; especially in the hands of William Cullen, who commenced to give clinical lectures in 1757 and became professor of practice of physic in 1773. An interesting account is given by Dr. Graves of Dublin of clinical teaching at Edinburgh when he was a student there in 1819. Two clinical clerks, he said, were appointed for the male and female wards, selected by the physician from among the senior pupils.



ROYAL HOSPITAL FOR SICK CHILDREN, EDINBURGH.

"Their business was to write an accurate history of the cases, to report the effects of medicines and to record the symptoms which might have occurred since the physician's last visit. At his daily visit the physician stood at the bed of each patient, and having received the necessary information from his clerk, he examined the patient, interrogating him in a loud voice, while the clerk repeated the patient's answers in a tone of voice equally loud. This was done to enable the whole audience to understand what was going on and required an exertion almost stentorian to render this conversation between the physician and his patient audible by the more distant members of the class. Every word was attentively listened to and forthwith registered most faithfully in each student's case-book and afterwards all the observations of the professors, made in their clinical lectures, were taken down with equal care and fidelity."

According to Graves, this method of instruction was indeed very useful, and nothing better could be devised for a beginner. Some forty years later, referring to the year 1853, the following picture of Syme is given by the late Dr. Joseph Bell (said to be the prototype of Mr. Sherlock Holmes):

"His hospital life was on this wise—two clinical lectures a week, operations two days more (perhaps three), a ward visit when he wished to see any special cases; he spent generally about two hours in the hospital. Driving down in his big yellow chariot, with footman, hammercloth, and C-springs, with two big, rather slow and stately white or grey horses, he used to expect his house-surgeon to meet him at the door and move upstairs with him to his little room, where he at once took up his post with his back to the fire and his hands under the flaps of his swallow-tail coat. In this little room he generally held a small *levée* of assistants, old friends, practitioners wanting to arrange a consultation, old pupils home on leave; and before this select class he examined each new and interesting case that could walk in. The new cases had been collected, sifted, and arranged by the dresser in a little room on the stair, irreverently known as 'the trap,' and Mr. Syme then and there made his diagnosis, which to us young ones seemed magical and intuitional, with certainly the minimum of examination or discussion. One was sent off with a promise of a letter to his doctor, another was fixed for to-morrow's lecture or next day's operation. Then, if it was lecture day, a tremendous rush of feet would be heard of the students racing to get the nearest seats in the large operating theatre where the lecture was given. Chairs in the arena were kept for colleagues or distinguished strangers; first row for dressers on duty; operating table in centre; Mr. Syme on a chair on left centre. In his later days it was a fine cushioned chair called the 'chair of clinical surgery.' (In 1854 it was a meek little wooden chair without arms.) House-surgeon a little behind, but nearer the door; instrument clerk with his well stocked table under the big window. He comes in, sits down with a little, a very little, bob of a bow, rubs his trousers legs with both hands open, and signs for the first case. The four dressers on duty, and in aprons, march in (if possible in step), carrying a rude wicker basket, in which, covered by a rough red blanket, the patient peers up at the great amphitheatre crammed with faces. A brief description, possibly the case had been described at a former lecture, and then the little, neat, round-shouldered, dapper man takes his knife and begins; and the merest tyro sees at once a master of his craft at work—no show, little elegance, but absolute certainty, ease and determination; rarely a word to an assistant—they should know their business if the unexpected happens; his plans may change in a moment, but probably only the house-surgeon finds it out; the patient is sent off, still anaesthetized, and then comes a brief commentary, short, sharp and decisive, worth taking verbatim if you can manage it, yet he has no notes, a very little veiled voice, and no eloquence."

Into this atmosphere Joseph Lister stepped in 1853 and took up the position of house-surgeon to Syme in 1854. Returning from his period of office as professor of surgery

in the University of Glasgow, he succeeded Syme as professor of clinical surgery in 1869. Lister's wards were situated in that part of the Infirmary which had formerly been the High School of Edinburgh, and which still stands as the Engineering Department of the University at the foot of Infirmary Street.

### THE ROYAL HOSPITAL FOR SICK CHILDREN.

The first hospital for sick children in this country, that of Great Ormond Street in London, was opened in February, 1852. For some time before and after 1840 Dr. William Campbell, lecturer on midwifery in Argyle Square, Edinburgh, gave a full course of lectures on the diseases of children, and these lectures were the first of the kind delivered in Edinburgh. Appeals began to be made about the year 1856 in the columns of the *Edinburgh Medical Journal* as to the expediency of founding a hospital for the diseases of children in Edinburgh, and later, about 1859, an agitation was made for the same purpose in the *Scotsman*, the *Witness*, and other papers. Premises were secured at No. 7, Lauriston Lane, and on February 15th, 1860, a hospital with twenty-four cots was opened. In May, 1861, the directors purchased Meadowside House at the foot of Lauriston Lane, with ground adjoining to the extent of one acre, and here a hospital was established for forty patients, including a separate fever ward. This building was formally opened in May, 1864, and a new surgical department was added in 1889. Here over 600 patients were treated annually. For a short time after 1890 the hospital was removed to a building formerly used as a hydropathic at Morningside, and subsequently, when the present building was completed in Sciennes Road, the hospital moved back to the central portion of the town. The hospital is a handsome building constructed of red sandstone, with two ward pavilions, three stories in height, and a central administrative block. Adjoining the hospital is a large out-patient department. There is also a convalescent home situated at Muirfield, Gullane, in which chronic cases and cases requiring a prolonged convalescence are treated by the seaside. During 1925, 2,968 cases were treated in the wards of the hospital and 7,459 out-patients, involving 28,242 attendances, at the out-patient department.

### ROYAL EDINBURGH ASYLUM.

The Royal Edinburgh Asylum for the Insane was founded by a charter in May, 1807, and the foundation stone of the institution was laid in June, 1809, by the Lord Provost of Edinburgh. The founding of this institution was largely the outcome of a suggestion by Dr. Andrew Duncan, who had been greatly impressed by the miserable death of Robert Ferguson, the poet, while insane in the common workhouse in 1774. When Duncan became professor of institutes of medicine, in 1792, he again brought up the matter, and in addition to the Royal Charter obtained a Government grant of £2,000 for the erection of this lunatic asylum at Morningside, Edinburgh, on modern, humane lines. This was the original East House, which, with the growth of the city, has now disappeared. The West House was added later, and in June, 1890, Craig House, on the slopes of Craiglockhart Hill, was obtained, and further asylum buildings added, which were opened in October, 1894. In 1917 an important further step in dealing with cases of mental disorder was taken by the managers of the Royal Asylum, who instituted five nursing homes for mental cases in Edinburgh, so that these could be treated without the objectionable feature of certification. A sixth home, known as Jordanburn Hospital, and intended for persons of the poorer classes, is at present in process of erection. The average annual number of patients under treatment in the institution is 850, and the managers have recently applied to Parliament for an order to change the name of the corporation and of the institution from that of the Royal Edinburgh Asylum to "The Royal Edinburgh Hospital."

### ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL.

In 1756, when Dr. Young was appointed professor of midwifery at Edinburgh University, a ward in the attic story of the Royal Infirmary, by permission of the managers, but at Dr. Young's expense, was fitted up for four lying-in women, or as many more as Dr. Young could accommodate, each exceeding the number four paying 6d. a day to the house. With the view of obtaining further opportunities for practical instruction the professor also gave notice that patients should be delivered at their own house free of expense and, if necessary, supplied with proper medicines. Dr. Alexander Hamilton succeeded to the chair in 1780 and carried on the same arrangements for about ten years. He was now allowed six beds in the attic ward of the Royal Infirmary, but he found this was altogether inadequate for the purpose of training nurses as well as teaching students. In 1791, therefore, he made proposals for the establishment of a lying-in hospital, and in the beginning of November, 1793, a proper building was purchased and a hospital was opened with the title of the Edinburgh General Lying-in-Hospital. Professor Alexander Hamilton was himself the ordinary physician to the hospital, and Dr. C. Stuart held the position of extraordinary physician. This house served as a maternity hospital for nearly fifty years and was situated in Park Place. Attendance on this institution was afterwards carried on by James Hamilton, the son and successor of the first Hamilton, during his long incumbency of the chair of midwifery, lasting forty years. Here the younger Hamilton was assisted by Dr. John Moir, who lived in the neighbourhood, and latterly took over most of the attendance on the hospital from the professor. After 1843, the house in Park Place being sold, the Lying-in Hospital went through a series of migrations, being transferred successively to a house at No. 2, John Street, where it became known as the Royal Maternity Hospital; three years later to Milton House in the Canongate; in 1852 to Minto House, and in 1856 to Chapel House, where it remained sixteen years. From 1872 to 1874 it occupied George Watson's Hospital buildings, acquired by the Royal Infirmary, which, however, was not yet able to use the building for wards. In 1874 it was transferred to 18, St. John Street, until a sum of money collected to perpetuate the memory of Sir James Y. Simpson became available, and in May, 1879, the new hospital in its present situation was opened for the reception of patients. Here the hospital has continued to grow both in usefulness and extent until further extension has become impossible. It has been affiliated with the five dispensaries of the city and has established a department in Leith. One of the most modern developments of the hospital was the ante-natal department established by the late Dr. J. W. Ballantyne, of which an account was given in the BRITISH MEDICAL JOURNAL of March 20th, 1926 (p. 539). In taking this step the hospital enjoys the distinction of having been the first hospital in the United Kingdom to initiate the movement for ante-natal supervision of expectant mothers. As it has become urgently necessary to rebuild the hospital, and as its present site is incapable of expansion, arrangements have been made between the Infirmary and the directors of the Royal Simpson Memorial Hospital that the latter should be amalgamated with the Royal Infirmary, and it will in course of time be rebuilt on a site in the immediate neighbourhood of the present Royal Infirmary buildings. During the year 1925 the hospital treated 1,854 indoor patients and 531 outdoor patients, while the Leith branch attended 549 women, making a total of 2,934 patients delivered in or in connexion with the hospital, a number which covers 35.5 per cent. of the total births in Edinburgh. The ante-natal clinic was attended by 1,297 patients with a total of 4,121 visits.

### *Leith Hospital.*

Leith Hospital is an institution which has gradually developed to its present size of a hospital containing nearly 100 beds. The Edinburgh and Leith Humane Society was founded in 1788, a dispensary was added in 1815, with a casualty hospital in 1837, and these institutions were combined as Leith Hospital in 1848 and incorporated in 1907. The hospital occupies a central position in the town of Leith, which now forms a portion of the city of Edinburgh. The most recent addition to the hospital was a ward for children containing thirty-six cots, which was completed in 1926 and opened as a war memorial to commemorate the men from Leith who fell in the great war.

*Deaconess Hospital.*

The Deaconess Hospital was founded by the Church of Scotland as a memorial to Lady Grisell Baillie, one of the initiators of the modern Deaconess movement. The hospital was founded in 1894 and contains some fifty beds, including wards for men and women, a gynaecological ward, and a children's ward. The number of patients treated in hospital during 1926 was 716, while at the out-patient department 5,960 patients were treated, with total attendances of 26,804. The hospital is situated in the densely populated district of the Pleasance, where its services are particularly valuable to the poor of the locality.

*Chalmers Hospital.*

In the year 1836 George Chalmers, plumber in Edinburgh, bequeathed the residue of his estate, amounting to £30,692, to the Dean and Faculty of Advocates for the purpose of founding a new hospital for the sick and hurt. After allowing the fund to accumulate for some years the trustees erected the present hospital in Lauriston Place, which was opened for patients in the year 1864. An addition to the hospital was made in 1898 to commemorate the Diamond Jubilee of Queen Victoria, and more recently alterations have been made to improve the surgical department of the hospital. The hospital contains almost fifty beds, equally divided between medical and surgical cases, with gynaecological and aural departments. The total number of patients treated in hospital during the year 1926 was 925. In addition to these, 3,571 persons received treatment at the out-patient department. Since an early period in its career this hospital adopted a principle which is at the present day considered to be an ideal arrangement for general hospitals, in the provision of private wards as well as free beds. The charge for maintenance in the private wards is at present fixed at 10s. 6d. per diem.

*Royal Edinburgh Hospital for Incurables.*

This hospital occupies a somewhat unique position among the hospitals of Scotland. Attention was drawn half a century ago to the urgent necessity for the provision of hospital accommodation for persons suffering from incurable diseases. A public meeting was held in Edinburgh in December, 1874, as a result of which the Edinburgh Association for Incurables was founded. The hospital, which was opened in 1875, originally provided twenty-two beds, intended for the reception of incurable cases, and for the purpose of affording the medical profession an opportunity of studying more carefully that class of disease which had hitherto been considered incurable. At the present time the hospital maintains two institutions—the Longmore Hospital, situated at Salisbury Place, Edinburgh, with accommodation for 160 beds, and Liberton Hospital, opened in 1906, with fifty beds, at Liberton, on the southern outskirts of the city, where cases of advanced tuberculosis especially are treated. A considerable proportion of the tuberculosis cases are of surgical tuberculosis in children, and with such cases there is often an encouraging number of successful cures. The hospital also possesses funds for affording outdoor benefit to patients who have recovered sufficiently to be discharged. The number of patients treated in the two hospitals during the year ending March, 1925, was 329, and the total number of patients treated during the fifty years of the hospital's existence up to that date was 5,933.

*Royal Victoria Hospital for Tuberculosis.*

The Victoria Dispensary for consumption and diseases of the chest was opened in November, 1887, at 13, Bank Street, under the superintendence of Dr. (now Sir Robert) Philip. As the result of growing activity and usefulness, the dispensary was removed in 1891 to 26, Lauriston Place. By this time about sixty cases were seen three times a week. During 1892 the important step of visiting patients in their own homes was undertaken, so as to trace other infected cases among those who had come into intimate contact with the patients. In 1894 Craigleith House, on the north side of the town, was taken as a hospital for tuberculosis and named the Royal Victoria Hospital. Here various pavilions were added in 1903 and at subsequent dates. The increasing activity of the dispensary necessitated its removal in the year 1911 to a large building which had become available in Spittal Street. This removal was made the occasion of a semi-jubilee celebration. At this time 2,042 visits to tuberculous families were paid annually by the doctors attached to the institution, and 5,273 visits by a staff of nurses. In 1910 Polton Farm Colony, situated in the country to the south of Edinburgh, was established, where on a farm some twenty persons suffering from chronic tuberculosis could obtain useful employment suited to their physical abilities. The organization was taken over by the Corporation of Edinburgh in 1914, the Royal Victoria Hospital being now provided with some 100 beds. The Tuberculosis Trust has still continued its activities, and in addition to the organization as managed by the Edinburgh Corporation, the Trust established the Sanatorium Colony of Southfield, near Liberton, in 1919, where cases of tuberculosis in any of its forms are treated and about forty patients are received. As another aspect of antituberculosis work, the Trust in 1923 leased the farm of Gracemount in the same neighbourhood, and established a model dairy farm with a herd of tuberculin-tested cows for the supply of certified milk.

*Edinburgh Hospital for Women and Children, and the Hospice.*

The Edinburgh Hospital for Women and Children, with a female medical and surgical staff, was founded in 1879 in Whitehouse Loan. The hospital increased gradually in size until now it contains some fifty beds. The Hospice was inaugurated in 1904 at 219, High Street, with ten beds, and maintained a separate existence until 1910. In that year the two institutions were amalgamated under one committee. In July, 1925, this committee reconstituted the Hospice and transferred it to Spring Gardens, overlooking the King's Park, as the Elsie Inglis Memorial Maternity Hospital. This hospital contains forty-five beds, and is shortly to be extended to sixty beds. It is reserved for the treatment of obstetric cases. These two hospitals have a certain number of free beds for persons unable to pay anything, but whenever possible patients are expected to pay from 25s. to 3 guineas weekly, the latter charge being the cost of a private room. The number of cases treated in the Bruntsfield Hospital during 1926 was 667, while the number treated at the Elsie Inglis Memorial Hospital was 670, with 213 cases in their own homes in the surrounding district.

THE DISPENSARIES.

Edinburgh was one of the first cities to institute dispensaries for the medical treatment of the sick poor.

The *Royal Public Dispensary* was the first of these, being founded in the year 1776 and incorporated by Royal Charter in 1818. It has thus completed over 150 years of existence. Its institution was largely due to the suggestion and effort of Dr. Andrew Duncan, who was also responsible for the initiation of several other of the Edinburgh medical institutions. The dispensary combines the double purpose of affording attendance to the sick poor and of giving instruction and an opportunity for practice to senior medical students. The medical officers attend in rotation on different days of the week, and each has a group of students with whom he sees those patients attending for advice, and to whom he apportions the patients requiring visits at their own homes. The patients receive gratis the medicine prescribed for them. This system of dispensary teaching has been an important feature of the practical instruction given by the Edinburgh Medical School during more than a century.

*New Town Dispensary.*—As the town grew and the poorer part of the population removed from its eastern end, new dispensaries were established. The first of these was the New Town Dispensary in Thistle Street, which was instituted in 1815. Here some 10,000 of the sick poor receive attendance by the medical staff and by students each year, as well as such medicines as may be necessary.

*Livingstone Memorial Dispensary.* — This dispensary was founded by Dr. Handyside in 1858, with the double object of providing medical attendance for the sick poor of the Cowgate district and a training school for medical missionary students. The dispensary in 1861 became the Edinburgh Medical Missionary Society Training Institution, and here various agencies, medical, social, and religious, are centred. The society also supports hospitals in Nazareth and Damascus, and trains students for work in these and various other mission fields. In addition the society maintains a convalescent home at Duddingston on the outskirts of Edinburgh, and deals with approximately 10,000 sick persons annually.

*Western Dispensary.*—This institution was founded in 1870 for attendance on the poor in the western part of the city.

*Provident Dispensary.*—This dispensary, established in 1678, was founded to provide the poor with medical attendance without making them feel entirely dependent on charity; it is supported by subscriptions, donations, and small payments made by patients for medicines. It occupies a position in Nicolson Square, close to the University, and is attended by students similarly to other dispensaries.

*Dispensary for Women and Children.*—The Dispensary for Women and Children at 21, Torphicen Street, is managed in connexion with the Bruntsfield Hospital for Women and Children and the Elsie Inglis Memorial Maternity Hospital. In addition to this dispensary there is a Steel-house Dispensary in the grounds of the Elsie Inglis Memorial Hospital at Spring Gardens, intended for maternity and child welfare work, and a branch dispensary at 29, Windsor Street.

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## THE MENTAL DEFICIENCY BILL

THE Mental Deficiency Bill was read a second time in the House of Commons on Friday of last week without a division. The bill is almost identical with the Government measure which at the end of last session was withdrawn for lack of time owing to somewhat unexpected opposition encountered in the concluding stages. The present bill is a private member's measure, and is presented by Mr. Crompton Wood, supported by Sir Douglas Newton, Sir Leslie Scott, Mr. Rhys Davies, Mr. Cadogan, Dr. Fremantle, and others. The memorandum explanatory of the bill was published in this JOURNAL last week (p. 549), and the admirable and interesting debate on the second reading is reported this week on page 602. As the bill has secured a second reading so early in the parliamentary session, as it received support so emphatic from the Ministry of Health, and as it was definitely opposed by one Socialist member only on grounds of pure individualism, it is to be presumed that its further progress will be facilitated by the Government, and that it will become an Act of Parliament before the session closes. In view, however, of what happened to its immediate predecessor it would be well for those who regard this consummation as of great importance —and the medical profession is included among these —not yet to relax their efforts, but to urge members of Parliament whom they can influence to give the bill active and continued support.

The bill proposes to amend previous enactments relating to mental defectives in three main ways. The first of these is by a change of definition. Hitherto there has been no legal definition of mental defectiveness; there have been merely definitions of certain classes of mentally defective persons. In the Act of 1913 each of these definitions included the statement that the mental defect must have existed "from birth or from an early age." Experience has shown the necessity for getting rid of these words on two grounds. On the one hand, there have been a considerable number of cases in which, though the mental deficiency was undoubted, and though to an expert investigator it was evident that the condition was congenital, it was impossible to produce actual evidence that the condition existed in the earliest years of life, since nothing was known of those years. In these circumstances magistrates have felt themselves unable to take action, and doctors have hesitated to certify. On the other hand, there are certain causes arising at a somewhat later age, such as the occurrence of encephalitis lethargica or of a severe head injury, which may produce an arrest of mental development, making it highly desirable that administrative or educational action should be taken on the same lines as though the condition were congenital. The definition now proposed will get rid of both of these difficulties. The classes of mentally defective persons (idiots, imbeciles, feeble-minded persons, and moral defectives) are differentiated as hitherto; but it is provided that "mental defectiveness" shall mean "a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by disease or injury." The introduction of a precise age limit into the definition is not scientific, and the medical profession would probably prefer a phrase of less rigid meaning, but its practical convenience for magistrates and administrators, and the fact that it will curiously satisfy a few parliamentary objectors, are held to outweigh any more theoretical disadvantages. A warning should be given, however, against any attempt to raise the prescribed age in Committee. Even if a few cases of real mental defectiveness should escape, it is essential not to include cases of unsoundness of mind which are of a different character, and which should be dealt with under the lunacy laws.

The second principal way in which the bill proposes to amend previous Acts is by a slight but important extension of the categories of defective persons who may be dealt with. In addition to defectives who are habitual drunkards, or who have given birth to an illegitimate child while in receipt of Poor Law relief, or who have been found guilty of a criminal offence or sent to a reformatory or industrial school, a defective can, under the present law, receive the protection of the Act of 1913 only if he be "found neglected, abandoned, or without visible means of support, or cruelly treated." Experience has shown that these restrictions tell very hardly on, for example, the poor mother of a mentally defective child (under 7 or over 16 years of age, and not notified by an education authority) for whom she is anxious to secure the treatment and training that can be obtained only in a properly equipped and staffed institution. Such a mother who has been giving her child all the devoted attention possible in her circumstances naturally resents having to plead "neglect," even though, in one sense, the child is neglected in that he is not receiving the care, training, and attention for which his or her condition calls. It is now proposed to add to the subsection above quoted the words, "or not under proper care or control." This addition will meet a class of case in which difficulty has been experienced.

The third main amendment proposed by the bill is to extend the methods by which certain classes of mentally defective persons may be dealt with. There are three such methods: (1) sending to an institution; (2) placing under guardianship; (3) supervision. At present children who have been educated as far as possible in a special school or class may, on or before attaining the age of 16 years, be notified by the education authority to the authority under the Mental Deficiency Act as needing guardianship or institutional care, but not as requiring supervision merely. There is a considerable proportion of higher grade defectives who can, with a varying amount of skilled supervision, safely be left in the care of their parents or employers and who do not need any more restrictive procedure. For such cases no legal supervision is now provided, and often, through its neglect, they become socially as well as mentally defective. The new bill proposes to remedy this omission.

All these alterations of the law are obviously reasonable in themselves and have been shown by experience to be really necessary. A large amount of thought, time, and care is being given by many persons in the most devoted and kindly way to supplying the needs of this peculiarly unfortunate class of mental defectives. The defectives themselves are found to be not only more useful and more largely self-supporting, but also much happier when they feel themselves protected in one or other of the ways that the law provides; and there need be no fear, even on the part of the most

suspicious, that as a result of the proposed amendments there will be any tendency to deprive any persons of the liberty they should enjoy.

## CANCER STATISTICS.

STATISTICS are made use of almost universally as an adjunct to medical investigation and research by experiment; there is no question of their utility in this connexion. When, however, they are made to replace experiment as a mode of investigation they are apt to acquire discredit if the principles governing their use are not strictly observed. In the solution of simple problems, such as the death rate per thousand of the total population, there is not much danger of going astray; but where complex problems are concerned, such as the influence of heredity in cancer, the alleged increase in its occurrence in recent years, and the influence of civilization as an etiological factor, more is often demanded of statistics than they can reasonably be expected to perform. It is not always realized that the conditions in a statistical problem need to be as carefully thought out as in an experimental problem.

The degree of reliance to be placed on statistics as at present employed forms the subject of an interesting paper in the *Journal of the American Medical Association* by Dr. Gideon Wells, entitled "Cancer statistics as they appear to a pathologist." He shows, in the first place, that statistics often give different answers to a plain question—for example, What is the commonest site of carcinoma in women? The statistics of the Middlesex Hospital give the breast as the commonest site; the Huntingdon Hospital, Boston, gives the skin; and the author's autopsy records from the Cook County Hospital give the stomach. It is by no means infrequent to find statistics applied in this manner, the data employed consisting neither of totals nor of fair samples of totals, and the deductions being made with a fine disregard of logic. Such misapplications as these are to be referred to an ignorance of statistical science rather than to any defect in the science itself. The ordinary methods of applying the general vital statistics to the solution of cancer problems are unreliable. Here the question of diagnosis comes into prominence, and this, added to the fact that the data employed cannot possibly be homogeneous, is a fruitful source of false deductions. In many cases no *post-mortem* examination has been made, and where this is so a considerable margin of error needs to be allowed for. Dr. Wells cites figures which give some idea of the possible extent of error that may arise from this cause. In his own hospital, out of 545 malignant growths, 367 were correctly and 178 wrongly diagnosed; Bashford's statistics from a number of London hospitals showed an error amounting to 112 in 396 cases; Reichelmann reported 156 errors in 711 cases in a Berlin hospital, and similar results have been reported from Budapest, Poland, Jena, and elsewhere. In addition many cases were diagnosed as cancer where it did not exist. Although Dr. Wells goes fully into the matter, it hardly seems necessary to inquire whether there is likely to be any considerable error in connexion with statistics based on death certificates instead of *post-mortem* examinations; if these things are done in the green tree, what shall be done in the dry?

Turning to the influence of heredity in cancer, the author states that existing statistics are worthless. The information obtainable from patients varies greatly with the circumstances. If a patient seeks advice for what he knows to be cancer, it is probable that he will have made full inquiries as to the occurrence of the disease in his family; whereas if he is suffering from some other disease, such as peritonitis, the family history will not have interested him. Another inherent source of error is the fact that a certain proportion of the patients will develop cancer at some later date, and yet they are used as non-cancer material. Further, if we attempt to work out the heredity of cancer with statistical material, using Mendelian principles, we find that this is impossible, for a single error of diagnosis might invalidate an entire family record, and there are probably no existing families with complete necropsy records of all deceased members for any considerable periods.

On the whole, statistics agree in indicating that cancer has been increasing in frequency in recent years, but the significance of the fact is not yet agreed on. As the average duration of life increases and infant mortality decreases, and as diseases such as typhoid fever and diphtheria become eliminated, it would seem safe to assume that the number of candidates for cancer must increase. A high crude cancer death rate may therefore be evidence of a good state of public health. Again, with an increasing accuracy of diagnosis many more cases of internal cancer should find their way into the records than heretofore. Reasons such as these may seem sufficient to account for an increased frequency of the disease. Yet the problem is not so simple as at first appears. No tendency to increased frequency has been reported by observers who have selected for consideration only the external cancers, which are unlikely to be incorrectly diagnosed. Willcox found that the cancer increase in Frankfort for the period 1860-1913 was limited to inaccessible growths, and similar reports come from Stuttgart, Berlin, Hamburg, and Great Britain.

Dr. Wells is no less sceptical of the value of statistics in reference to the influence of civilization and the supposed increase of cancer in primitive peoples when they come in contact with modern civilization; and he sums up his reflections on the whole subject in the following terms: "After thinking about what the figures may mean, and what they really mean, and what others think they mean, I find myself unable to accept anything about cancer as finally established by statistics." One conclusion to be drawn from his investigations is that there must be a sad ignorance of the science of statistics and of its proper mode of application.

### LISTER CENTENARY IN LONDON

IN our issue of March 5th (p. 437) we announced the arrangements made for celebrating in London the centenary of the birth of Lord Lister, which falls on Tuesday, April 5th next. At the reception of delegates by the Prime Minister, which will take place at 11.30 a.m. that day in the Great Hall of the British Medical Association House, there will be a considerable number of seats available for members of the medical profession and for the general public. Members desiring tickets for themselves and friends are requested to make immediate application by letter to the Financial Secretary, B.M.A. House, Tavistock Square, W.C.1. Tickets are available also for reserved seats at the ceremony in Westminster Abbey on the morning of April 6th. The arrangements made for the celebrations by the London committee are summarized in a time-table printed in the SUPPLEMENT at page 104, where information about academic dress will be found.

## FRENCH EXPERIMENTAL WORK ON TUBERCULOSIS.

IT would appear that more experimental work in tuberculosis is being done in France than in England, and the results of several such researches have been reported to recent meetings of the Académie de Médecine of Paris. Perhaps the apparent difference between the two countries is due to tuberculosis being a more serious disease in France; or perhaps the enthusiasm of Calmette stimulates other workers. Dr. Vaudremer recently presented a report on some further researches undertaken by himself and Drs. Puthomme and Paulin on the development of the tubercle bacillus. The experiments consisted in cultivating on gelatin tubercle bacilli which had been submitted previously to the action of substances elaborated by the *Aspergillus fumigatus*. They claim to have proved as long ago as 1910 that the growth of this fungus will destroy the greater part of a culture of tubercle bacilli in glycerinated broth, and with it the tuberculin. The recent experiments showed that in cultures of tubercle bacilli exposed for a few days to the products of the growth of the aspergillus there appeared, among masses of acid-resisting organisms, a number of granules, and of bacilli with a terminal granule, which had lost the resistance to acid and were colourable by methylene blue. The granules resembled in appearance Gram-staining meningococci. Ultimately the typical bacilli in the culture completely disappeared, and were replaced by zoogloeal masses of cyanophile granules. Shortly after the appearance of these masses the culture medium became cloudy; and at this point it was possible to make fresh cultures of the granules on a gelatin medium. With successive cultures the granules assumed the form of a cyanophile, granuliferous matting similar to that described by Bezançon and Philibert. The cultures on gelatin appeared to die quickly; but if kept for some months resuscitation occurred, and amidst cyanophile granules and acid-resisting granules typical bacilli were found. In the same preparation it was possible to follow the passage from the ordinary granule to the classic bacillus of Koch. None of the elements grown in aspergillus fluid or on gelatin produced tuberculosis in guinea-pigs. To render them virulent it was necessary to grow them in a medium of animal origin, such as glycerinated ox serum. They would then kill guinea-pigs in eight days. If, however, the gelatin cultures were killed by heat, they conferred, when subcutaneously injected into guinea-pigs, a marked resistance to tuberculosis, lasting at least fifteen months. As a result of these experiments tubercle cultures simply modified by aspergillus fluids were at first used therapeutically on patients at the surgical clinic of the Salpêtrière under Professor Gosset. The treatment was applied in 128 cases of surgical tuberculosis, and 85 were followed up. The best results were obtained in osteitis of small bones, in adenitis, epididymitis, and peritonitis. The treatment was less effective in hip disease and in aged persons. Subsequently cultures on gelatin from the aspergillus fluid were used, and 260 patients were treated by this method, which gave better results, over 75 per cent. being cured, as compared with 48 per cent. under the first method.

## HISTORY OF MEDICINE.

THE Section of the History of Medicine of the Royal Society of Medicine held its last ordinary meeting of the session on March 16th, when four communications on widely different subjects were made. The first was a paper by Sir D'Arcy Power on the place of Tudor surgeons in English literature, which Dr. Kenneth Hay read for him in his absence. This showed by examples how faithfully the English surgical writers of the sixteenth century reflected the changing character of the nation during the renascence in England, which began with the introduction of printing into this country. The love of nature and of the open air characteristic of the period revealed itself in the opening passages of Thomas Gale's *Institution of a Surgeon*, and in extracts from William Bullen's *Dialogue Against the Fever Pestilence*. Another good example of contemporary literary style was that of William Clowes, writing on the subject of syphilis. That Master Clowes could speak his mind very plainly when the occasion called for it was shown in a paragraph of invective against the deplorable state into which English surgery had fallen in his day. This generation of surgeons—Hall, Gale, Clowes, and Read—tried an experiment which began and ended with them, and happily failed; they essayed to write in verse, and the lines quoted by Sir D'Arcy Power proclaimed them pretty bad versifiers. But the prose passages went far to substantiate his claim that the Elizabethan surgeons had a definite place in English literature at a time when our written language was being moulded ready for the hand of Shakespeare and the translators of the Authorized Version. Dr. Charles Singer next introduced to the Section a record, compiled with great pains by Professor E. Morpurgo of Padua, of the many English physicians who studied in the Collegio Veneto Artista of the University of Padua between 1617 and 1771. Greater than any of these names, however, is that of William Harvey, who received his doctorate at Padua in 1602; the illuminated diploma is one of the treasures of the Royal College of Physicians of London. Dr. Singer then showed some photographs of a recently discovered example of the Egyptian god Bes, giving in detail his reasons for thinking that the original of this grotesque image suffered from spina bifida. Lastly, Dr. Herbert Spencer showed the very rare book, Wolveridge's *Speculum Matricis*, printed in 1671, together with two manuscript copies in the society's library—one of them beautifully written and illustrated with loving care. Dr. Spencer traced this book to a much earlier work, and told how Wolveridge's manual for midwives was itself plagiarized later under another name.

## WILD RODENTS AND PLAGUE.

AMONG the communications submitted to the Standing Committee of the Office International d'Hygiène Publique at its recent meeting in Paris is one which treats of the increasing activities of wild rodents as agents in the transmission of plague. There are places in Asia, Africa, and America where rat plague, originally brought to the coast on shipboard, has made its way inland, infected indigenous wild rodents, and so established itself as a settled enzoötic in tracts previously immune. In each locality a few species only are the constant reservoirs of infection. Among them are the marmot, *Arctomys bobac*, in the north-east of Asia, the gerbille, *Tateroma lobengulae*, in South Africa, the sousliks in South-West Russia, and the ground squirrels in California. As a class they are trapped or shot with a view to the protection of crops or for their own intrinsic value, and those who pick up or handle their carcasses may contract plague from the fleas. Field-mice, such as *Rattus coucha* and *Arvicanthis pumilio*, serve as intermediary channels of infection, bringing the disease with them from the open country into the dwellings of man. Among the fleas implicated are *Ceratophyllus silantievi* and *Neopsylla setosa*. In these areas the common rat, for once, seems comparatively blameless. It is true that he started the enzoötic at first, but having done this he does not himself, under these conditions, pass plague on to man. Plague in wild rodents shows a tendency to visceral, and especially pulmonary, involvement. It is remarked that in hibernating rodents infection may remain localized during hibernation, awakening to activity at the close of the winter sleep. Plague in man contracted from wild rodents is rather apt to assume the pneumonic form

such cases may or may not be preceded by cases of the bubonic type. The attempt has been made to extinguish enzoötic plague by exterminating the peccant rodents. This has proved a formidable and costly task. Short of wholesale destruction, however, some good may be done by local repression. Clear zones are established round inhabited places as buffers against the wild. Rodents are kept down in these zones by the use of poison bait, poison gas, and explosives, or by turning to account their natural enemies, such as carnivores, birds, and snakes. With regard to marmots, there is the special point that marmot-catching is a lucrative business which those engaged in it are unwilling to abandon. It is recommended that it should be scheduled as a dangerous trade, and governed by regulations for the protection of workers.

## NATIONAL HEALTH INSURANCE STATISTICS.

THE statistical review of national health insurance given by Sir Alfred Watson, the Government Actuary, to the Royal Statistical Society, and reported in the SUPPLEMENT of last week (p. 94), shows the vast extent and some of the many complications of the scheme of insurance. His figures are not only interesting in themselves, but have an important bearing on all proposals for the extension of the medical services. The accumulated funds now reach a total of £120,000,000, a sum which, as the Royal Commission recommended and as we have previously noted, should be sufficient for those extensions of medical, maternity, and laboratory services which are urgently required. The total number of insured persons is given at about 15,600,000. It is interesting to note that between 1919 and 1923 some 5,263,000 persons entered insurance, that the numbers of men and women were almost equal, and that 60 per cent. of them came in at the age of 16 years. With entrants in such numbers compulsorily secured, the scheme can scarcely be held to require any overloaded reserve fund. During the same period some 3,000,000 women left insurance, more than 800,000 on marriage, and the remainder apparently mainly because their resort to industrial employment was only temporary. Of the 1,800,000 men who went out, it is concluded that the great majority of those over 35 years of age did so by reason of their taking up forms of occupation other than employment. It would, however, be valuable to be told, if possible, how many of these, both men and women, were clerical workers who left insurance by reason of their salary rising above £250 a year. Such information has never, we believe, been forthcoming. The statistics of sickness benefit relate, first, to the numbers claiming such benefit, and secondly, to the average duration of incapacity. Under the former heading experience among men and among unmarried women is eminently satisfactory, and that among married women only less so. A marked improvement in the health of the community seems to be indicated, the "rate of sickness" being on the average 20 per cent. less than the experience of the Manchester Unity of Oddfellows in the years 1895-97, on which, it will be remembered, the actuarial calculations for the national scheme were based. Figures with regard to the duration of incapacity, more particularly among women, are not so good. This duration in the case of married women claimants averaged eight and three-quarter weeks. This is a very high figure, and seems to call for some explanation. One conclusion which it seems possible to draw from the combined figures is that the opportunity to work is one of the best preventives of incapacity to do so. Among women the sum drawn in the war years 1916-17 was less than two-thirds that drawn in 1913-14, and since the war these claims have again risen, till they are now approaching the level of the earlier period. Disablement benefit has, of course, been an increasing quantity as the insurance scheme has grown to maturity. It is estimated that there are now about 200,000 persons permanently disabled and drawing benefit from approved societies. Altogether, it seems to be established that the effects on national health are beneficial, that the financial position is satisfactory, and that there is every reason why those improvements of the service which have been advocated by the medical profession and others, and endorsed by the Royal Commission, should be proceeded with without undue delay. Some further discussion of Sir Alfred Watson's paper, by a well informed correspondent, will be found at page 589.

## HOSPITAL DIFFICULTIES IN CHINA.

FAILURE on the part of the Southern Government of China to appreciate the essential lines on which modern hospitals must be conducted has compelled the board of directors of the J. G. Kerr Hospital for the Insane in Canton to close that institution. We referred on February 26th (p. 392) to the dispute between this hospital and the local labour union, and mentioned that the Cantonese Government had expressed a certain amount of sympathy with the hospital. It has now, however, issued a series of regulations for the administration of all hospitals in China, whether Chinese or Western, public or private; the terms of these, though less absurd than those suggested by the labour union, are of such a nature as to render continuance of hospital work impossible. The fact that many of these hospitals are almost wholly supported by the charity of subscribers outside China is ungratefully ignored, and the hospitals are henceforth to be compelled to accept the additional liability of treating all their sick employees until well without deduction from wages. In the event of the death of an employee who has served for more than a year, the hospital must pay the relatives the equivalent of six months' wages; hospitals for contagious diseases are similarly liable for twelve months' wages, while if the worker has been employed for more than six years the grant must be larger: "the amount to be discussed at the time," though by whom is not revealed. Hospitals are permitted to engage their employees as they please, but must then compel them to join the local labour union. If the dismissal of any employee causes trouble among the workers the Government will establish a court of arbitration, during whose deliberations no employee of the hospital may be dismissed for any reason, however protracted the proceedings of the court may be. Picketing is forbidden, and more or less suitable arrangements for public holidays are defined, but, since it is stated that these regulations can be "amended" at any time by the officials, any element of security would appear to be lacking. Dr. James Maxwell, who is secretary of the China Medical Association, has sent us a reprint of these regulations, which were published in the *South China Morning Post*. He states that the executive committee of the China Medical Association is advising its members to close their hospitals where these regulations are to be put into force. He adds that joint action is likely to be taken by the Chinese National Association and the China Medical Association to impress on the Southern Government the gravity of the situation thus created, with a view to obtaining the withdrawal of these regulations.

## THALLIUM.

AT the meeting of the Section of Dermatology of the Royal Society of Medicine on March 17th Professor W. E. Dixon gave some results of experiments on the pharmacology of thallium carried out under his charge by Dr. J. H. Wadia. Thallium exerts the remarkable action of causing a loss of hair and general alopecia in all animals. On the other hand, if skin areas of animals are shaved, thallium induces a rapid growth of hair in these parts compared with control animals. Histologically the interruption in the normal

growth of the hair in animals treated with thallium appears to depend on a failure of the normal process of transition from the large polygonal epithelial cells of the hair bulb to the horny scales of the hair. Thallium rubbed into the skin with oil or alcohol is readily absorbed, but exerts no action on the skin until after absorption; it has no local action. It exerts no action of moment on the vessels of the skin, and although it can be found in almost every tissue of the body after absorption, the skin is an exception; so that its action, unlike that of arsenic, cannot be a local action on the skin. One other most remarkable feature of thallium is its effect on the autonomic nervous system. The whole autonomic system becomes more sensitive, so that electrical stimulation of nerves produces an exaggerated response. This is most marked on the sympathetic portion of the autonomic system. Professor Dixon suggested that this was the explanation of the increased growth of hair or alopecia which supervened with thallium therapy. He compared the action with ordinary alopecia, and gave some reasons for believing that such alopecia also was due to some abnormal functioning of the autonomic system. In view of the action of thallium on the suprarenal gland, which is so closely associated with the sympathetic system, he suggested that suprarenal therapy might be worth trying by dermatologists in certain cases of alopecia.

## REST PAUSES IN HEAVY WORK.

THE Industrial Fatigue Research Board is accumulating valuable information on the occurrence and effect of rest pauses in various forms of work. Until recently the investigations were concerned for the most part with light repetitive occupations; the latest report to the Board by Dr. H. M. Vernon and Mr. T. Bedford, assisted by Mr. C. G. Warner, deals with "Rest pauses in heavy and moderately heavy industrial work" (H.M. Stationery Office, 9d. net). Rest pauses, unless arranged as part of the routine of a factory, may be either voluntary or involuntary, the latter being due to such causes as lack of material, the intervention of other workers in removing accumulated products, and so on. Voluntary rest pauses in light repetitive work occur generally as the result of boredom and monotony rather than from fatigue. But in heavy muscular effort the pauses are literally rests, and serve for recovery from physiological fatigue. The occupations investigated by Dr. Vernon and his colleagues ranged from moderately heavy work in agriculture, road-making, dock labour in unloading, and bootmaking, to pitch loading, coal mining, and, heaviest work of all those investigated, tinplate rolling. The rest pauses of the agricultural labourer, who plods his weary way in solitude, are naturally all voluntary. The ploughman pauses at the end of each furrow, and in this way consumes 14.6 minutes in each hour of work. In the lighter work of harrowing or rolling the rests average 8.1 minutes an hour, and are not taken with the same regularity as in ploughing. In many occupations the voluntary rest pauses are strikingly similar, and amount to about 11 minutes an hour. But in tinplate rolling the various processes involve a very large amount of involuntary pause, with the result that, while the voluntary rest pauses of the different workers employed are about 7 minutes, the involuntary pauses range from 7 to 23 minutes in each hour. The observers were surprised at the similarity of habit in rest pauses spontaneously adopted by groups of men employed in widely different occupations. They found that in the moderately heavy processes of bootmaking there was no sign of fatigue in the afternoon. They discovered that in pitch loading, in which payment at piece rate is an inducement to work, the men rested for about half their time, but undoubtedly put in a very hard day's work; and in coal getting they concluded that the most advantageous rest was one which lasted less than a minute, and that the involuntary rests forced on miners were unnecessarily long, and, as relief to fatigue, were wasted. The observers regarded this demonstration of the ineffectiveness of involuntary rests as the most important practical conclusion of their report. At the same time, the varied nature of the collier's work would make it quite impracticable to devise for them an artificial scheme of rest pauses.

## THE SHORTCOMINGS OF THE PARENT.

"AND only parents' love," says Browning, "can last our lives." But the complaint of the psychologist seems to be that parents' love is too lasting, too masterful and overwhelming. The address given by Dr. J. R. Rees at the Child Study Society on March 17th was virtually a plea for a more detached attitude on the part of parents to their children. Parental errors, arising, not from neglect, but from fussiness combined with ignorance, accounted, said Dr. Rees, for numerous problems concerning the individual in after-life. It was extraordinarily difficult to convince parents that to bring up a child required much learning, a capacity for self-effacement, and the acceptance of a whole-time job. Parenthood was taken for granted, and though the terminology of the parental function and duty had been modernized, the old methods and mistakes were perpetuated. The grosser mistakes of spoiling were obvious. The foundation of hysteria in later life was often laid by the parent who took up the infant every time it cried, so that the child came to think there was something magical in a howl which secured for it immediate attention. The vast number of people who were afflicted with self-consciousness had most likely been placed on a pedestal by their parents, unduly praised to their faces, and presently, having been knocked off the pedestal by an unfeeling world, suffered from a sense of inferiority, and were perpetually striving to regain their former elevation. Dr. Rees said that the number of children afflicted with "nerves" was extraordinary, as was the number of parents who were actually proud of the fact that their children were highly strung, thinking that to have "nerves" was rather distinguished and interesting. These parents never realized that they were condemning themselves, and that the nervous child was no more a subject for pride than the lying or thieving child, and was very often the result of parental mishandling. In nine cases out of ten it was not the child, but the parent, who should be punished. Dr. Rees pleaded for a closer co-operation between parent and teacher. Part of the teacher's job was to understand the parent. He hardly ever met a teacher without hearing an exclamation about the "awfulness" of parents, nor a psychotherapist without a similar tale, generally more emphatically told. There should be conferences between parent and teacher over the child, and in really difficult cases the doctor or the psychologist might be brought in. Dr. Rees went on to say that the art of parenthood depended to a great extent on the art of being married. There could be no successful parenthood without successful marriage. Many "difficult" children came from homes where parents did not understand each other, where the conjugal adjustment had never been made, and thus no progressive atmosphere was created. To his mind the conjugal was more important than the parental side of marriage, if only because the former lasted throughout life, whereas the parental function ceased when the children went out into the world and got homes of their own. The conjugal side mattered more than the parental, except perhaps during the months of pregnancy and of nursing the child, yet many women had the idea that being married was an incident only, and that mothering was the really important thing. Women had a difficult time over this problem, and few solved it. He believed that a good

deal of morning vomiting during pregnancy and other upsets was due to interior conflict over the adjustment of the parental and conjugal relations. Too often the mother became over-identified with her children—had them, so to speak, always on her own wave-length. The father did not come into the picture until the child was about 4, at which age the jealousy complex arose in the child, with efforts to detach one parent from the other, and this was likely to be successful where there was uneven discipline, where the parents failed to back each other up, and where there was competition for the child's favour. Parents, again, often made the mistake of not respecting their children enough. They looked upon them as others looked on a Pekinese dog, talked silly language with the idea of keeping the child young, failed to realize that the child was a logical little being, with thought processes as reasonable as their own. Parents often thought of a child, not as a prospective citizen committed to their charge, but as a possession which they had a right to manipulate and push about. If a parent resorted to disciplinary measures he should make it plain to the child that these were not imposed because he was offended and happened to be stronger and older, but because the social demand and responsibility had been infringed, and he, the parent, was the person who, for the time being, had to interpret this to the child. Much ill was wrought by parents who fussed and nagged their children, kept control over them in small matters, and refused to allow them to adventure, simply because they were not prepared to see their offspring make mistakes. Upon sex, too, they often looked as a narrow thing, a physiological process merely, instead of teaching their children that it was a large and splendid thing. Sex education, he considered, was not a job for the schools, though instruction in biology might be given there, but a job for the home. Sir John Cockburn, M.D., the president of the Child Study Society, who was in the chair, remarked upon the tendency he had observed for those brought up under strict parental discipline to be indulgent when they became parents themselves, and for their children in their turn to revert to an attitude of strictness; hence the frequent disharmony, of which the child took advantage, between parental and grandparental rule.

## GLASS FRAGMENTS IN FOODSTUFFS.

IT may be gathered from a report just published by the Ministry of Health[1] that we may eat glass with impunity, and that famous mediaeval poisoners used powdered glass merely as a vehicle for the conveyance of more deadly things. Apparently public analysts were perturbed by the discovery of particles of glass in foods and drinks put up in glass containers. The Ministry, therefore, instructed Dr. G. C. Hancock to carry out an investigation; and he has now reported on the "Occurrence of glass fragments in foods packed in glass containers." Public analysts, it appears, have found glass in beer, mineral water, marmalade, jams, potted meats, and numerous other foods. In some cases such particles were found in 72 per cent. of the articles examined. Generally the particles were only 1/1000 or 1/2000 of an inch in size, but fragments as large as a quarter of an inch were sometimes found in jam. Did the glass come from the container? Dr. Hancock is not very clear on this point. Most food manufacturers, it appears, are well aware of the value of good glass, and for their own protection seek to avoid the possibility of contamination by broken bottles. The process of manufacture of cheap hand-made glass may leave splinters or fragments in the container. But most glass containers are now made by semi-automatic or completely automatic processes. "Returned empties" may have chipped and jagged rims; but measures are usually taken to eliminate such containers, and some firms use only new bottles or jars. Moreover, in some of the samples examined by Mr. Munro, an analytical chemist, the refractive index, tested with benzine, was found to differ from the refractive index of the glass container. It is suggested, therefore, in the report, that the dust in factories, with its particles of slag, which has all the properties of true glass, may be a source of contamination. And fruit on its way to the jam factory is bound to pick up a large quantity of dust. For the purposes of Dr. Hancock's investigation a series of microphotographs was prepared by Dr. Monier-Williams. These show how glass particles may be differentiated from other siliceous material by means of polarized light. The microphotographs are reproduced at the end of the report; and the chunks of old red sandstone, glass, and other residue to be found in salmon and shrimp and anchovy pastes will shock the consumer of these delicacies. However, it is gratifying to learn from Dr. Hancock that, even if glass is an undesirable ingredient of food, there is little, if any, evidence that in powdered or microscopic form it has any injurious effect. As confirmatory evidence Dr. Hancock quotes the case of the young negro who ate half a dozen test tubes, two good sized lamp chimneys, a 4-oz. medicine bottle, two pieces of window glass, and three strips of coloured glass one inch wide and three inches long! The story will perhaps console those who expected something both definite and sensational in a report on this subject.

[1] Ministry of Health. Reports on Public Health and Medical Subjects. No. 37. London: H.M. Stationery Office. 1927. 1s. net.

## AN ANATOMICAL CONGRESS IN LONDON.

THE French Association des Anatomistes has arranged to hold its meeting in London on April 11th to 13th in association with the Anatomical Society of Great Britain and Ireland. The meeting will be held at University College, and about 150 members of the two societies are expected; as the French society includes anatomists from Belgium, Italy, Holland, Switzerland, Spain, Portugal, Poland, and Czecho-Slovakia, the congress promises to be of an international character, and the first of its kind held in Great Britain. On the evening of April 11th a conversazione will be held at University College, and on the following evening a reception at the Wellcome Historical Medical Museum. On April 13th there will be a dinner at King's College. Arrangements have been made for the members of the congress to visit Cambridge as the guests of Professor Wilson. During the congress a trade exhibition dealing with scientific appliances and other technical equipment for anatomical study will be held.

## THE HUME-SPRY CASE.

WE conclude this week at page 600 our summarized report of the action brought by Mr. Hume-Spry against Dr. R. Percy Smith and Dr. A. H. Watson for damages for their alleged negligence in certifying him as insane. The case occupied fifteen days in the King's Bench Division before Mr. Justice McCardie and a special jury, and, as most people who followed the proceedings at all closely had anticipated, it ended in a verdict for the defendants, with costs. The jury, in fact, by their action in stopping the case after a patient hearing, clearly intimated their opinion, not only that the two defendants, Dr. Percy Smith and Dr. Watson, had acted *bona fide* and with reasonable care in certifying the plaintiff, but also that the insinuations which the plaintiff had instructed his counsel to make were wholly without foundation. The judge's own view of the plaintiff's evidence is clear from his remark to the effect that the documents in the case would be held at the disposal of the Director of Public Prosecutions. We congratulate Dr. Percy Smith and Dr. Watson on the outcome of their protracted ordeal. Our comments on other aspects of the case must be deferred to a later issue.

# THE AUSTRALASIAN MEDICAL CONGRESS
## OF THE
# BRITISH MEDICAL ASSOCIATION,
## DUNEDIN, NEW ZEALAND.

## INAUGURAL CEREMONIES.

THE second Australasian Medical Congress of the British Medical Association was held in Dunedin from February 3rd to 10th. The first, it may be remembered, was held in Melbourne in November, 1923.* The proceedings at Dunedin took place in the Medical School Buildings, King Street, while demonstrations of cases and operations were given in the Dunedin Hospital immediately opposite, and in the new Dental School close by. The session was a great success from every point of view. Nearly 600 members of the medical profession were in attendance, representing every State of Australia and New Zealand; and there were present, in addition, Dr. Cooper Pattin, accredited representative of the British Medical Association in the British Isles, and Dr. George Piness of Los Angeles, medical representative of the United States of America. The meeting of the Congress in Dunedin—the first since 1896—roused great interest, more especially as the University of Otago with its medical school is the centre of medical education in New Zealand; visiting members spoke very highly of the warmth of their reception, and of the boundless hospitality shown to them.

### OPENING OF NEW MEDICAL SCHOOL BLOCK.

The Medical School Buildings, in which most of the proceedings were located, consist of two blocks. The latter and larger of these is a new structure, just completed in time for the opening of the Congress. The opening ceremonies on February 2nd formed, therefore, a highly appropriate preliminary to the Congress proceedings. The formal ceremony was performed by the Acting Premier, the Hon. W. Downie Stewart, in presence of the Chancellor of the Otago University, Mr. T. K. Sidey, M.P., and a large gathering of members of the University Council and staff and of Dunedin citizens, together with a number of visiting members of the Medical Congress.

The CHANCELLOR, who presided, expressed his pleasure at the presence of several oversea members of the Congress, and on behalf of the University tendered a hearty welcome to them. The first steps, he said, towards the establishment of a medical school in connexion with the University of Otago were taken in 1872; but for a considerable time after its foundation the school had provided only for a portion of the degree course, the students having to go to Britain to complete their medical training. It was not till 1883 that the complete medical course was provided, and the first medical student graduated in 1887. Since then the number of medical graduates had risen to 667, apart from a considerable number of graduates of other universities who had taken part of their course in Otago. During its early years the school had been financed almost wholly by provincial funds and private donations, but its rapid growth had compelled the University Council to seek Government assistance. He thanked the Government for having rendered possible the construction of the much-needed new building, and the completion of the medical scheme which brought all the departments of the school to one centre, in close proximity to the clinical material of the hospital.

The ACTING PREMIER, in declaring the school open, and in congratulating the University and the city on the fine building just erected, referred to the great interest taken by the city of Dunedin and the province of Otago in the Medical School since its foundation, as shown in the practical financial support that had always been forthcoming. The present building was the result of unceasing efforts and long negotiations of the University Council with the Government. Mr. Stewart spoke also of the unquenchable enthusiasm with which the Dean of the Medical Faculty, Sir H. Lindo Ferguson, had striven for the advancement of the school. "I congratulate the Medical Faculty," said Mr. Stewart, "which is now housed in ample space for effectively and properly educating the students in medicine. In my opinion, no profession is better warranted in that direction than the medical profession. In the earliest days, when this school was struggling into existence and towards further success, the leading medical men of Dunedin put their medical services without reserve at the council's disposal for the purpose of assisting the students by personal and voluntary services. In that respect they were a shining example to other professions in New Zealand."

Speeches were also delivered by the DEAN of the Medical Faculty and by Dr. L. E. BARNETT, President of the Australasian Medical Congress.

The new building is a commodious and imposing structure of three floors and a basement, and is connected with the older block by a passage-way on the first floor. Its construction enables the departments of anatomy and physiology, which had hitherto been located in the University Buildings in Leith Street, and which, in spite of several extensions, had outgrown their old quarters, to be grouped alongside the other medical departments in one centre opposite the hospital. The sub-departments of histology, biochemistry, and pharmacology are also provided for. The greater part of the second and third floors is devoted to anatomy, with dissecting-room, lecture-rooms, museum, library, and professors' and demonstrators' rooms. The first floor is allocated to physiology, the chief rooms being those for junior physiological chemistry, with a chemical preparation room adjoining, two lecture-rooms, rooms for advanced physiological chemistry, gas analysis, food analysis, library, tutorial work, and research.

The ground floor has an imposing entrance and stair hall, in which a prominent figure is the bronze bust of Lister which had been on view at the recent New Zealand and South Seas Exhibition, and which was presented to the school by Mr. Edmond Andscombe, the exhibition and university architect. On this floor are placed the general offices, waiting-rooms, men's and women's common-rooms, junior experimental room, experimental demonstration room, experimental research rooms, preparation room, rooms for experimental physiology, and rooms for the professors of medicine, clinical medicine, and surgery.

The basement extends over the whole area. The anatomy section accommodates the mortuary, workshop, storage tank, refrigerating chamber and plant, bone room, and modeller's room. The physiology part contains the animal room, rooms for vitamin and nutrition work, electrocardiograph and x-ray room.

The whole building is heated by low-pressure steam and lighted by electricity. The cost of the building alone was £110,000.

### INAUGURAL CEREMONY.

The inaugural meeting of the Congress, held on Thursday evening, February 3rd, in the Early Settlers' Hall, was one of the most brilliant and impressive functions which Dunedin has known for many years. The entrance to the hall was specially illuminated with a brilliant electric sign bearing the word "Welcome," and the interior was decorated with draped flags, with massed foliage and flowers on the platform, while the entrance halls were embowered in New Zealand ferns and greenery.

* BRITISH MEDICAL JOURNAL, 1924, vol. i, pp. 30, 71, 125, 165, 201, 340.

On the platform were the Hon. S. S. Argyle, Dr. George Piness (Los Angeles), Dr. J. Macmillan Brown (Chancellor of the New Zealand University), Dr. F. Antill Pockley, the Hon. W. Downie Stewart (Acting Premier of New Zealand), Dr. L. E. Barnett (President of Congress), Sir George Syme (retiring President), the Hon. J. A. Young (Minister of Health), Dr. A. C. Purchas, Mr. T. K. Sidey, M.P. (Chancellor of the Otago University), Dr. H. Cooper Pattin (Norwich), Mr. H. L. Tapley (Mayor of Dunedin), Mr. H. S. Newland, Dr. R. H. Pulleine, Dr. R. Wade, Mr. B. Kilvington, Dr. Dunbar Hooper, Sir H. Lindo Ferguson (Dean of the Medical Faculty), Dr. Jefferis Turner, Dr. T. A. Valintine (Director-General of Health, New Zealand), Dr. A. M. Morgan, Dr. A. L. Kenny, Dr. O. Latham, Dr. F. S. Batchelor (President of the New Zealand Branch, British Medical Association), Dr. A. H. Tebbutt, Dr. Harvey Sutton, Dr. S. A. Gibbs, Colonel Tracy-Inglis, Major-General Barber, Dr. R. H. Todd, Dr. H. E. Gibbs, Mr. N. D. Royle, Dr. J. S. Elliott. The large hall was filled to its upmost capacity with members and friends.

At 9 o'clock the retiring President, Sir GEORGE SYME, called upon the Hon. W. Downie Stewart, Acting Premier, to declare open the Second Session of the Australasian Medical Congress of the British Medical Association.

*The Acting Premier's Speech.*

The Hon. W. DOWNIE STEWART, welcoming on behalf of the Government those who were attending the Congress in Dunedin, expressed regret that the Prime Minister (the Right Hon. J. G. Coates) had not been able to return to New Zealand from the Imperial Conference in time to open the Congress. He had been pleased to hear from Dr. Barnett that quite a number of oversea visitors who were with them that night had been present at the last Dunedin Congress in 1896. Dr. Barnett was one of the very best type of New Zealand practitioners. In Australia and New Zealand the medical profession was known, not only for the very high standard of its own special work, but individually for its broad interest in public affairs, and particularly in supporting the fine arts—painting, music, literature—subjects too much neglected in small communities. In the world of medicine and surgery there were greater advances being made and greater movement of thought was manifest than in any other profession. Co-operation and consultation were becoming increasingly necessary; the institution of clinics and specialists was taking the place of the old family physician. Speaking particularly of the present Congress, Mr. Stewart maintained that in no other country in the world could such a congress be held in such happy and hopeful circumstances. New Zealand enjoyed an extraordinarily healthy and bracing climate, where health was not a Utopian dream, but a national ideal—an ideal capable of approximate realization. Her geographical configuration tended to the production of towns of moderate size and a well distributed population, and not of great metropolitan conglomerations with their vice, crime, and squalor. Her pioneers had come from the best British stock, and were resourceful and capable. She had no racial troubles. The Maoris were happy and contented, and were the only native race which, in contact with Europeans, was not declining: on the contrary, they were increasing and prospering.

Mr. Stewart then declared the Congress open.

*Address by the Minister of Health.*

The Hon. J. A. YOUNG (Minister of Health) said that it was a great compliment to New Zealand that this Congress was so well attended. He read a message from the Right Hon. S. M. Bruce, Prime Minister of Australia, who had just passed through Auckland on his way home from the Imperial Conference in London. The message read as follows: "On behalf of the Government and people of the Commonwealth of Australia I desire to extend to the Australasian Medical Congress best wishes for success. Thanks to the unremitting efforts of the public-spirited members of their great profession, our citizens are realizing the part which health plays in every aspect of our national life, and the enormous economic waste occasioned by the inefficiency of the partly unfit. I hope, and indeed I feel sure, that the labours of the Congress will advance us still further towards the accomplishable ideal of a happy, prosperous, and healthy community." Mr. Young added that there was great opportunity for co-operation between the medical profession and the State; the State had the great responsibility of teaching the people by legislation so to act that they might escape the pitfalls of disease, and avoid exposing their fellow-citizens to needless sufferings by ignoring elementary rules of health.

*Sir George Syme's Speech.*

The retiring PRESIDENT said that it was exactly forty years since the thought had occurred to Dr. Fulton of Adelaide that it would be a very good thing to have gatherings of the medical practitioners of Australia and New Zealand in congress. The idea was very warmly supported by the profession in South Australia, and materialized in the first session of what was then called the Intercolonial Medical Congress, under the presidency of Dr. (now Sir) Joseph Vercoe, who was still active in his service to the community and to the profession. Since then a series of congresses had been held under other presidents. Sir Joseph Vercoe, an eminent physician, was followed by an equally eminent surgeon, Sir Thomas Fitzgerald, and in turn the position had been held by university professors, by general practitioners, and by specialists. He congratulated Dr. Barnett on being nominated by the New Zealand Branch and appointed by the Federal Committee of the British Medical Association in Australia to the position of President. Those who had been present at the Congress in Dunedin in 1896 regarded that meeting as the high-water mark of all congresses before or since; he was confident that the present Congress would equal its predecessor.

Sir George Syme then inducted Dr. L. E. Barnett, C.M.G., M.B., C.M., F.R.C.S., to the position of President of the Congress.

# THE PRESIDENT'S ADDRESS.

In the course of his address the PRESIDENT said:

"The Australasian Medical Congress, since its inception in 1896, was held every three years, independently of any other organization; but, beginning with the medical congress in Melbourne a little over three years ago, it has merged itself voluntarily, and I think wisely, in the British Medical Association. It had thus become part of a great imperial scientific institution, of which the King is patron. Though the majority of the people are of the same opinion as their sovereign in regard to the maintenance of the high ideals and traditions of medical practice, yet we have repeated and very obvious indications that there are quite a number of people who do not see eye to eye with us, and we have to face at times very bitter antagonism towards a policy that has been devised conscientiously and with infinite pains to safeguard the interests of the general public equally with those of ourselves.

*Medical Ideals and Lay Criticism.*

"There are many who mock and deride us for our subservience to what they call a ridiculous code of medical etiquette. There are some who criticize us in frank and fearless fashion, but withal reasonably, and often usefully. Hostile criticism, if it is reasonable, has a more purifying and stimulating effect than friendly adulation. 'A friendly eye does never see such faults,' and the medical profession makes no claim to be faultless. Our little medical parliaments are as liable as the greater parliaments of the people to make blunders, and that is certainly a fair admission of human limitations, of human error, of human frailty. Criticism by an opposition party is a good thing in the people's parliament, just as it is a good thing in the parliament that deals with the doings of doctors. We must give consideration to the honest and reasonable criticism of the opponents of our policy, whether that

criticism comes from lay or medical sources. But we cannot help feeling resentment at the publication of gross and unwarranted statements that accuse us of rank dishonesty; allegations, for instance, that we are a great trade union, whose chief aim is to keep the wages of its doctor members at the highest possible level; that we strangle competition by keeping out of this union the numerous and wonderful unorthodox healers, who have not conformed to our requirements of a thorough medical education; that we advocate vaccinations, operations, inoculations, animal experiments, and so on, not for the sake of suffering humanity, but for the benefit of our sordid selves; that we only give gratuitous service to the hospitals and sick poor for the sake of prestige and a free advertisement—that is to say, we climb over the backs of the poor into the pockets of the rich.

"I have the impression that these intensely bitter and vociferous critics of ours are not only mentally, perversely active, but also abnormally healthy in body, and that, consequently, they have not had their crude conclusions confounded by any dangerous and painful malady, accompanied by the soothing ministrations of a capable doctor. We judge it wise to refrain from responding in the lay press to calumniations of this kind. The piquant controversies that otherwise would arise could produce nothing but confusion. We are quite prepared to be judged by the majority. Let our lives and our actions suffice to discredit our detractors.

"It has been said that human destiny is largely in the hands of the medical profession. Whether this be so or not, we must not fail to realize the sacred duty that devolves upon us—namely, the medical care of the most wonderfully beautiful and intricate living thing on earth—the human body, and with it the human mind, and even the human soul. We know that Nature, if unhindered by harmful customs imposed by a too luxurious civilization, can cure most illnesses and heal most wounds in human beings, just as is the rule in lower animals. We know, and we preach, that if people lived a more natural life, from the pre-natal stage onwards through babyhood to adult life—if they took more advantage of those priceless tonics sunshine and clean, dust-free air; if feeding was more rational as regards quality, quantity, temperature, and periodicity; if the drinking of alcohol was not abused; if teeth were looked after and food well masticated, and if they earned their meals by a fair measure of exercise—there would then be much less necessity to resort to the ministrations of the physician and the surgeon, to the nostrums and cure-alls of the proprietary drug vendors, or to the hocus-pocus of quackery.

"But we doctors know that there remains a considerable and serious proportion of cases of illness, virulent microbic infections, tumours and cancers, grievous injuries and mechanical disabilities which Nature unaided cannot cope with—troubles which may at first seem slight and unimportant, but which have tragic possibilities, and which may be overwhelming from the very outset. Not individuals alone, but whole communities, suffer disaster if troubles of this degree of gravity are allowed to progress unchecked. Disease and degeneration, injuries and ill habits, and other health-destroying agencies are numerous and often complex, obscure, and difficult to control. To prevent and to conquer these malign influences and to repair the ravages of illness and injury, a defending army of selected, educated, and trained doctors has been organized—an army which has for its headquarters staff, its board of control, its disciplinary body, the General Medical Council and the British Medical Association.

"These assemblies have always included medical representatives of eminence and special fitness for their duties. Quite recently, in deference to public opinion, a lay member has been added to the General Medical Council—namely, Commander Hilton Young, a distinguished English politician and one of the heroes of the Zeebrugge naval attack. Lay representation on the Council is, I think, a wise provision, calculated to allay public distrust in the pronouncements of that important body.

"We have, in the course of long years, evolved a scheme of medical education and training, of efficiency examinations, of ethical regulations, of safeguards against injustice, of post-graduate study and research, of preventive measures for the lessening of disease and the control of epidemics. We benefit in many ways by such a scheme, but the public benefit still more. We have the public welfare at heart just as much as, if not more than, our own, and that is a point which deserves reiteration.

"Moreover, we do not try to interfere with public liberty. A sick man, or a man who thinks he is sick, is not bound to come to one of us for treatment. He can choose a layman if he wants to—he can have the drains of his own precious body—his stomach, his bowels, his kidneys, and whatnot—tinkered with by an ill-educated self-styled healer who has not the haziest idea of the intricate mechanism of these essential organs; yet if he wants the pipes, drains, or sewers of his house looked to, the law insists that he must employ a man specially trained and certified for the job—paradoxical but true.

*Cancer Research.*

"We shall endeavour to stimulate and correlate cancer research in the various Australasian centres. Although far more cases of cancer are cured now by operative and radiological means than in former years, chiefly because the patients are learning the wisdom of seeking treatment when the disease is in its early stage, yet, owing to the increasing prevalence of this still mysterious malady, the total death rate from cancer keeps mounting higher and higher. The cancer problem is still with us, but ever nearing solution as a result of intensive labour in a hundred fields.

"I take this opportunity of congratulating Sydney University on the generous response of the people of New South Wales to its appeal for a Cancer Campaign Fund. With a sum of well over £100,000, a splendid plan of research can be instituted, and I only hope that other scientific centres in Australasia, including Dunedin, may have the same good fortune.

*Research in Public Health.*

"The Governments in every civilized country now regard it as their bounden duty to encourage research that has for its object the betterment of the public health. The Royal Commission on Health for Australia, so ably presided over by Sir George Syme, has recently reported the conclusions of one of the most valuable investigations into public health matters that have ever been made, and one of its recommendations, and a very significant one, is that a health research council should be established and provided with an endowment of £30,000 per annum.

"We shall at our meetings give detailed attention to the important subjects of maternal and infantile mortality, of tuberculosis, and of certain tropical diseases of great public concern in Northern Australia and the Pacific Islands; to questions concerning diet in health and sickness, and to many other matters of special interest from the preventive medicine point of view.

*The Australasian College of Surgeons.*

"I must refer also—and I do it in optimistic vein—to the proposed inauguration, during the currency of this Congress, of the Australasian College of Surgeons, because I believe that such a college is likely to have a valuable influence on the public welfare, and because I have for some years been trying to mould professional feeling in New Zealand towards something of this kind. The promoters will endeavour to combine the good points of the Royal Colleges of Surgeons of the British Isles with those of the more recently founded American College. The aims are to raise the standard of surgical efficiency, surgical endeavour, and surgical ethics in both hospital and private practice, and to encourage the provision of facilities in hospitals whereby a sufficient number of suitable men can be specially trained to undertake the responsible duties of a surgeon.

"In Great Britain it is quite exceptional for anyone without special training and experience to do major operations, but in the newer countries, like America, Australia, and New Zealand, there is not the same restriction. In these countries major operative work is quite commonly

undertaken by men who, though adequately equipped with what is popularly called 'nerve,' lack, in varying degree, that knowledge and experience which are requisite in deciding such questions as: (1) Is an operation really necessary? (2) When should the operation be performed? (3) How are the unanticipated difficulties and complications to be handled? (4) How should the scope of the operation be limited or extended according to circumstances? I do not insinuate that the only competent surgeons will be those who are Fellows of a college. For various reasons a man who really is a good surgeon may not wish, or may not be in a position, to obtain a hall-mark of this kind. The patient's choice will be unfettered. If he selects an operator who is not a Fellow of a college he may or may not get a properly trained man, but if he does choose a Fellow of a college he can rest assured that he has the services of a fully trained surgeon.

*Hospital Appointments.*

"The greatest care should be exercised in the selection of the junior and senior staffs of our hospitals for many reasons, and one of them has to do with the supply of trained surgeons to the community. The recognized recipe for the making of a surgeon is to take a young man who shows both intellectual ability and manual dexterity, and place him in an approved hospital, first as a house-surgeon, and then as assistant surgeon for several years. The passing of a high-grade academic examination is desirable, but is not essential to the performance of high-grade surgery. The main thing is good hospital work, at first under supervision, and later independently.

"Painstaking, skilful, and kindly hospital work does materially help in the building up of the very best class of private practice. But the kind of advertisement a hospital gives is similar to that of a shop window, exhibited, however, not to the public generally, but to those only who know the worth of the articles displayed. When a surgeon or a physician habitually shows work of good quality within a hospital it is appraised accordingly by competent observers—that is to say, by his colleagues, his students, and his nurses. If, on the other hand, his work is habitually faulty, then, instead of a good advertisement, he gets a bad one. A hospital appointment may place a man in consultant rank, but only if he is worthy of it. The public benefit enormously by this automatic method of grading medical practitioners through the medium of their gratuitous hospital service.

"Modifications in our hospital systems are now receiving serious consideration, largely stimulated by the investigations and reports of Dr. MacEachern, the American expert on hospital standardization. I hope that many of his valuable suggestions will be adopted, and, in particular, I would like to see our public hospitals made available to all classes, but with the proviso that the sick poor shall continue to have the gratuitous services of an honorary staff, in accordance with the honourable traditions of the profession. For in this, as in all things, we must jealously guard the great heritage of public esteem and public confidence that we owe to our predecessors."

At the conclusion of the presidential address the visitors and their friends attended a reception by Dr. and Mrs. Barnett in the adjoining Art Gallery Hall.

## SOCIAL EVENTS.

Congress week was a very full one. The various proceedings were entered into with great interest and enthusiasm by members, and the sectional meetings brought forth many able papers and keen discussions. The many social events were well organized and highly appreciated. An official Congress dinner was held at the Fernhill Club, and sectional dinners were held at the Fernhill, Otago, and University Clubs. A medical women's dinner was held at the Carlton Hotel. Members were also entertained at various private dinners throughout the city. Garden parties or "at homes" were given by Mr. T. K. Sidey (Chancellor of Otago University) and Mrs. Sidey, by Sir John Roberts and Mrs. George Roberts, by Sir Lindo and Lady Ferguson, by Mrs. North, Mrs. Edmond, and others. There were also several cabaret evenings, and bridge, tennis, and golf parties for the ladies. On February 6th the Mayor and City Council organized a motor excursion to Waipori for about one hundred members, and a special train took large parties to various doctors' seaside residences at Waitati and Warrington. Dr. Gribben (medical superintendent of Seacliff Mental Hospital) and Mrs. Gribben entertained the members of the Neurological Section at lunch at Seacliff. A popular lecture by Dr. Peter Buck (Te Rangi Hiroa), director of Maori hygiene, on the subject "The coming of the Maori," was one of the most interesting of outside events.

A very extensive trade exhibit by well known British, American, Australian, and New Zealand firms occupied most of the ground floor of the Medical School buildings.

The Congress Museum was organized under the direction of Professor F. Gordon Bell, and besides showing a number of interesting pathological conditions contained many original wax models of anatomical conditions. There was an interesting display of plastic surgery, and relics of former congresses were also on view.

The general organization of the Congress was the subject of very favourable comment by visiting members of the Congress, and special credit was bestowed on the "inner executive"—the President (Dr. L. E. Barnett), Dr. W. P. Gowland (Honorary General Secretary), Dr. A. M. Drennan (Honorary Associate Secretary), and Dr. D. W. Carmalt-Jones (Honorary Treasurer).

The scientific and clinical work of the Congress was shared by twelve sections—namely, medicine; surgery; obstetrics and gynaecology; pathology; preventive medicine; ophthalmology; otology, rhinology, and laryngology; neurology; pediatrics; naval and military; orthopaedics; and radiology. We shall publish an account of the proceedings of these sections in an early issue.

# Nova et Vetera.

## QUEEN SQUARE.

In an interesting book with the above title[1] the Secretary of the National Hospital for the relief and cure of diseases of the nervous system makes a pleasant contribution to the history of eighteenth century London. When, however, on the first page of the book he lays down the boundaries of what he imagines to be Bloomsbury, we most emphatically disagree and disapprove. "Queen Square, Bloomsbury," is a phrase used no doubt for the sake of distinction from other Queen or Queen's Squares, but it is incorrect. The name "Bloomsbury" has been very loosely used by many writers, but none, we think, have gone so far as Mr. Hamilton, who places its eastern boundary at Gray's Inn Road, and so includes Gray's Inn. Why stop there? Why not go on to the line of the Fleet ditch, or even further? The boundaries of Bloomsbury have been exact and well defined for more than six hundred years as the ancient manor of the Blemunds of Tottenhall, and later as part of the parish of St. Giles-in-the-Fields, and when the parish of St. George, Bloomsbury, was formed in 1724 it had the same boundaries as the ancient manor, and it has them to this day. Its eastern boundary corresponds to the east side of Southampton Row (which has swallowed up Kingsgate Street, where lived that irregular but popular obstetrician Mrs. Sarah Gamp. Queen or Queen's Square (it has been known by both names) is therefore outside Bloomsbury. It was designed in Queen Anne's reign, but was not begun to be built till after her death, "at the north end of Devonshire Street, near Red Lion Square," as a contemporary described its position. The two squares are linked by more than names, for Alexander Pope, who went to a school in Devonshire Street, lay ill in later years in Cheselden's House in the Westminster Square. Many people have supposed that the statue in Queen Square, like that in Queen Anne's Gate, represents the good (but sluggish) Queen Anne. The mistake is natural, but, as Mr. Hamilton shows, it is beyond dispute that it is meant

[1] *Queen Square.* By Godfrey Heathcote Hamilton, Secretary, National Hospital, Queen Square. London: Leonard Parsons. 1925. (Med. 8vo, pp. xi + 146. 10s. 6d. net.)

for Queen Charlotte, the consort of George III at the time of its erection in 1775. The square was built upon part of what were known as the Conduit Fields. These fields seem to have been a well known playground. In Mist's *Weekly Journal* for May 16th, 1719, there is the following report:

"Last Week a Tryal was brought at Guildhall before the Lord Chief Justice Pratt, between two Companies of Cricket Players, the Men of Kent Plaintiffs, and the Men of London, Defendants, for Sixty Pounds played for at Cricket, and after a long Hearing, and near 200 l. expended in the Cause, my Lord not understanding the Game, ordered them to play it over again; and they met accordingly on Monday last in Lamb's-Conduit-Fields, but one of the Players being taken ill, it was deferred to another Opportunity."

No doubt the judicial ignorance was genuine and not assumed as has sometimes been the case in our time. Whether the match was ever replayed or no we cannot tell.

There appear to have been numerous conduits in this neighbourhood which collected water from springs and conveyed it to London through pipes. The term "conduit" was used to include the collecting cistern, generally housed in for protection, the pipe conveying the water, and the standard from which the water was drawn for distribution. Such a system is described in Stow's *Survey* thus:

"There lieth a street from Newgate west to the end of Turnagain Lane, and winding north to Oldborne Conduit. This conduit by Oldbourn (Holborn) Cross was first built 1498. But of late a new conduit was there built in place of the old, namely, in the year 1577, by William Lambe, sometime a gentleman of the chapel to King Henry VIII and afterward a citizen and cloth-worker of London. The water whereof he caused to be conveyed in lead from divers springs to one head and from thence to the said conduit, and waste of one cock at Oldborne Bridge more than two thousand yards in length. All of which was by him performed at his own charges, amounting to the sum of fifteen hundred pounds."

This was Lamb's Conduit, from which the northern continuation of Red Lion Street takes its name. An earlier conduit seems to have supplied the celebrated Greyfriars monastery—Eastminster, as Besant called it—which was situated in Newgate Street, where afterwards Christ's Hospital (now being itself forgotten) stood next to Christchurch. The White Conduit Fields, further to the north-east of Lamb's Conduit, were named after another water supply. One conduit head which survived until recently was situated in the garden of No. 20, Queen Square, and has been carefully taken to pieces, removed, and re-erected in the grounds of the Metropolitan Water Board at the New River Head in Rosebery Avenue. The only similar building—to the present writer's knowledge—still existing in London is the ivy-covered water-house on the south side of Hyde Park, just inside the Knightsbridge railings, opposite the Alexandra Hotel. This was connected with the water supply of the Abbey and Palace of Westminster, and is undoubtedly the oldest building in the neighbourhood. One of the difficulties of supplying London with water in this way was caused by land and house owners through whose property the pipes passed tapping them and drawing off water, so that in one case there was no longer any flow at the standard or conduit in the city.

At the beginning of the eighteenth century, when Queen Square was planned, the buildings of Bloomsbury proper did not extend north of Great Russell Street; but east of what is now known as Southampton Row building operations had reached further northward up to the line of Great Ormond Street or thereabouts. Southampton House and its garden occupied the whole of the north side of Southampton (since called Bloomsbury) Square, and when, by marriage, the Russells inherited the property of the Wriothesleys this house became known as Bedford House.

Bloomsbury Square has medical interest, for in it Radcliffe and Mead and Sir Hans Sloane dwelt and practised. Mead afterwards moved to the house in Great Ormond Street, close to Powis House, in which the Hospital for Sick Children was afterwards established, much helped on by a former occupant of Tavistock House, Charles Dickens.

All through the eighteenth century the Russells enjoyed an uninterrupted view of Highgate and Hampstead from the back windows and garden of Bedford House across the Long Fields, parts of which afterwards became Russell Square. Only one building of any size can have obtruded itself on their view. This was Baltimore House, built in 1763 by Frederick Calvert, sixth and last Earl of Baltimore. This bold bad man seems to have been of the Surrey melodrama type:

"Can I forget those wicked lords
Their voices and their calves
The things they did upon those boards
And never did by halves?"

This particular wicked earl became notorious for his goings-on in this house, to which he decoyed a Miss Woodcock of Tower Hill and detained her for some days, during which he made repeated attempts at seduction, and at length carried her off by force to his house near Epsom, where he effected his purpose by foul means. He was tried for rape at Kingston Assizes in 1768, but acquitted. An intelligent jury, having found him not guilty, wanted to record a verdict of guilty against some of his servants, who were charged as accessories. Perhaps they thought rape was allowable in an earl, but not in plebeians. Lord Baltimore died three years later and left his immense property in the State of Maryland to a boy, named Henry Harford. The house still stands, much altered, at the southern corner of Guilford Street and Russell Square, within a stone's throw of Queen Square.

"Queen Square, Bloomsbury . . . seems to have been set apart for the humanities of life and the alleviation of all hard destinies." Thus wrote Robert Louis Stevenson, and even now that the Alexandra Hospital for Hip Disease has left it, there are enough hospitals and offices of philanthropic agencies to make good Stevenson's statement, although some people may question the suitability of his description when applied to the Examination Hall of the Royal Colleges. But even there they temper justice with mercy and are cruel only to be kind.

The neighbourhood was never aristocratic as Mayfair, Portman Square, and Belgravia have been, but in it and the older part of Bloomsbury lived leading men in law, medicine, and science. Dr. Anthony Askew came to live in Queen Square in order to be near Mead in Great Ormond Street. Askew was more distinguished as a classical scholar than as a physician, and, like Mead, he left a great collection of classical literature and Radcliffe's celebrated gold-headed cane, which he inherited from Mead and passed on to Pitcairn and Baillie, whose widow presented it to the Royal College of Physicians. Later medical residents of the square have been Sir Rickman Godlee and Hughlings Jackson. Dr. Charles Burney, the father of Fanny and the historian of music, and William Morris represent art among the former inhabitants.

It is a pity that so many of the fine old houses of Queen Square should have been condemned as insecure and therefore pulled down and rebuilt, not always in styles in keeping with their older neighbours. The pity is the greater because the sacrifice was probably unnecessary. Sir Francis Fox tells us in his book of reminiscences how one of the old houses in Great Ormond Street, occupied by the Hospital for Sick Children, was condemned as unsafe, and how the committee of the hospital, faced by the prospect of an outlay of many thousands of pounds, appealed to him. He was able, by applying the system of grouting which saved Winchester Cathedral, to save this house and render it stronger than it had ever before been, for a fraction of the cost of destruction and rebuilding.

When St. George's, Bloomsbury, was made a separate parish from St. Giles-in-the-Fields and St. George-the-Martyr was cut out of St. Andrew's, Holborn, the growing population made new burying grounds necessary, and accordingly sixteen acres of meadow land were obtained a little to the west of Gray's Inn Lane and consecrated for the use of the two new parishes. These cemeteries are now known as St. George's Gardens. Here various notabilities were buried, from Nancy Dawson the hornpipe dancer to Zachary Macaulay, whose famous son once lived in Queen Square. This Bloomsbury graveyard was the scene of the Resurrectionists' activities which occasioned the first prosecution for such an offence in England. In 1777 the gravedigger and his assistant, and also a woman, were

tried, under an indictment for a misdemeanour, at the Westminster Guildhall before Sir J. Hawkins for stealing the dead body of Mrs. Jane Sainsbury, who had been buried nearly two months before. The woman was acquitted, but the men were convicted and sentenced to the savage punishment of six months' imprisonment and to be each severely whipped twice in the last week of their confinement from Kingsgate Street to Dyott Street, which is full half a mile—in fact, along the whole of the southern boundary of the parish—but the whipping was afterwards remitted. Had they been convicted of stealing anything with the body they would have been guilty of felony and would have suffered a much greater punishment. In a small house at the end of Handel Street, abutting on the graveyard wall, was Cooke's School of Anatomy, the last survivor of the once flourishing private medical schools, which were killed by the regulations of the College of Surgeons. Until quite recently this school was licensed under the Anatomy Act, and here anyone could, on payment, study practical anatomy and dissect without being or becoming a medical student. Mr. Cooke was for some years on the staff of the Westminster Hospital, and his *Tablets* of anatomical and physiological facts in a concise form may have been familiar to some among the older generations of our readers. In this building recently two men were found dead from poisoning by illuminating gas, and the inquiry into the circumstances of their death afforded occasion for much speculation and profit to the "yellow" press.

Mr. Hamilton's book contains much that is of great interest and abounds in reproductions of old prints and modern photographs of the neighbourhood. It forms a valuable addition to the fast-growing library of books about London.

## THE GOVERNMENT ACTUARY ON NATIONAL HEALTH INSURANCE.

[FROM A CORRESPONDENT.]

AT a meeting of the Royal Statistical Society on March 15th Sir ALFRED WATSON, K.C.B., Government Actuary, read a paper entitled "National health insurance: a statistical review," which will interest many readers other than professed statisticians.*

The evidence adduced that the sickness experience of males was becoming more favourable is very important. Sir Alfred Watson has analysed a thoroughly representative sample of the national experience of 1921-23 and compared the results with those of the registered friendly societies in 1876-80, and of the Manchester Unity of 1893-97. For reasons either stated in the paper or elicited by the discussion, he is of opinion that these three experiences are fairly comparable. He does not think that the omission from the national experience of sickness lasting not more than three days, which was included in the old friendly societies' experience, seriously impairs comparability. Again, the method of taking the sample for 1921-23 virtually excluded that class of insured person which does not claim sickness benefit. Assuming comparability, the results of comparison are remarkable. The friendly societies' experiences, which may be taken as typical of the conditions of the industrial classes fifty and thirty years ago, were practically identical. Between the ages of 20 to 24 and 55 to 59 the sickness rates per annum hardly differed in the two series. But the national experience of 1921-23 was far more favourable. Thus at 40 to 44 the rate of sickness per annum was 1.08 weeks in 1876-80, 1.07 in 1893-97, 0.80 in 1921-23. At 45 to 49 the rates were 1,28, 1.23, and 0.90. At the oldest age in the table, 60 to 64, the rates were 2.51, 2.30, and 1.85.

Sir Alfred Watson comments as follows:

"If, as must be believed, the relatively favourable experience of the most recent period is dissociated from any continuous decline having its origin in the early years of the century, or even previously, it must apparently be ascribed to conditions special to the period in which it has emerged. Some may find such conditions in the increasing efficacy of medical benefit as provided by the Insurance Act and the regulations thereunder. Others may ascribe the change, in part at any rate, to conditions set up by the war and, in particular, to the increase in the cost of living with which the sickness benefit provided under the Act, though substantially augmented in 1920, has scarcely kept pace. While the claims have risen since 1923, as shown by Table III, the comparison which Table IV provides is such as to afford strong grounds for hope that the sickness intensity shown by the experiences of the friendly societies in the later years of the nineteenth century will not again be reached. So much at least should have been secured to us by the advancements in the twin sciences of medicine and surgery, in the practice of sanitation, and in individual education, with which this generation has been blessed."

It is to be hoped (although not expected) that those critics of their fellows who have in some instances not hesitated to "explain" excessive local rates of sickness as due to malingering, abetted by medical men, will note the caution with which Sir Alfred Watson (who, in the course of his reply, gave a striking example of the injustice of some recent uncharitable interpretations of changing sickness rates) offers explanations of so striking a decline. We shall do well to imitate him in resisting the temptation to assign all the credit of the improvement to the medical profession. One point may, however, be noted. If the low sickness rate of the sample experience of 1921-23 were due to men unfit to work "sticking it out" for fear of losing employment or on account of the cost of living, we should expect an unfavourable influence to be exerted upon the death rates. No such effect can be discerned, so that although we cannot prove that *real*, as distinct from statistical, ill health is less to the extent the figures imply, there is certainly no inherently more plausible explanation. This is a very satisfactory result. Less satisfactory is Sir Alfred's demonstration of a heavier incidence of sickness upon women than upon men, particularly upon married women.

"The figures respecting married women" (he writes) "reveal conditions to which in its fullest import the word 'serious' applies. Not only are the claims among this section far more numerous, relatively to the numbers insured, than those of the unmarried, but at all ages up to 35 the average duration of the claims in the case of the married is in marked excess of that among the unmarried. It is not too much to suggest that an average duration of incapacity, within the year, of seven to eight weeks at practically all ages from 16 to 65 for every woman who is sick is disconcerting, and that such an experience in the case of the married women invites consideration of the fact that in the usual case the husband also is an industrial worker, and a portion only of the family earnings is suspended when the woman ceases to work."

An obvious suggestion—namely, that married women who are industrially employed have a far heavier burden to shoulder than spinsters, may well be true, but the fact, disclosed by a tabulation of the separate years 1921, 1922, and 1923, that the ratio of the average duration of sickness benefit per insured married woman to the average per insured unmarried woman is increasing cannot be so explained. As Sir Alfred Watson remarks, "It is surely contrary to reason to suppose that the health of married women, as contrasted with that of their unmarried sisters, is deteriorating at this rapid rate."

There are many other points in this valuable paper to which attention might be called, but perhaps enough has been said to send readers to the original, which, not being thick-set with statistical algebra, can be read by any intelligent person. Some may have felt that, so far, too little use has been made of the national health insurance experience for the elucidation of problems of national health other than those of finance. Sir Alfred Watson has given an excellent example of what is possible on these lines. It is to be hoped that he and his colleagues will give many more papers similar to this one. From the nature of the case, the private investigator cannot achieve much, although if insurance practitioners had less to do and were more interested than most medical men are in statistical methods, their material might furnish data for very interesting papers.

* A summary of Sir Alfred Watson's paper appeared in last week's SUPPLEMENT, and further comment upon it will be found in the JOURNAL this week at p. 581.

# France.

[FROM OUR OWN CORRESPONDENT.]

### MEDICAL EDUCATION.

THE same problems face every country at the same time, and it is not surprising that the question of medical education should come to the front once more. A good deal of readjustment has taken place since the war, and the medical faculties in France have given up the old system which seemed to have been organized rather to turn out anatomists than medical men. Understanding that medicine relies more and more upon physiology and laboratories, the anatomical course has been reduced to the first year at the faculty. A very strenuous and full year it is for the poor student who has to face a severe examination at the end of the first academical year. It may be added that he is now under a system working like a steam-roller, his time-table being fixed. As a matter of fact, he has not even a right to be ill; if he misses a class three times he is not allowed to sit for the next examination. Aesculapius appears to be sceptical of Aesculapian excuses. The question goes far beyond that of organization. The whole system of education has been criticized at the Academy of Medicine.

First of all scientific preliminaries as actually taught in the Faculté des Sciences, prior to the student matriculating as medical, are far beyond the requirements of the average doctor. It is suggested that such teaching should be given by men who have received a medical training, and not merely by what we call "pure" scientists.

Then comes the most important and subversive move. The French system is, and has been, characterized by the fact that from the very start the student comes into contact with hospital patients. Before knowing anything of medicine he has to examine and to report on patients; the idea is that a good medical training means having seen as large a number of patients as possible. It may be that we should replace "seen" by "understood," and perhaps a great many useful hours are wasted in the wards. The new system proposes to control the non-initiated much more closely, but the number of students makes it necessary that there should be many more teachers, and that physicians in charge of hospitals should be recognized, if it be their desire, as such.

As all our hospital appointments are the result of competition, it is now asked that their programme should cease to be exclusively anatomy and theoretical medicine. The attention of the young students must be turned towards physiology, and they should prove, before taking charge of their ward laboratory, that they have some idea of the use of the instruments they are responsible for. This is not the case at the present time. A good memory is the essential requisite for the first competitive examinations. The result is that students try to secure the office first, and then learn how to make the best of it. The sooner the change comes the better.

The final question is how the body of teachers should be organized. Some would have teaching professors on the one hand and research professors on the other. It is quite a different proposition from that of whole-time professors, which has a very poor chance with us so far as medicine is concerned. How, it is asked, should the professorial staff be recruited? Many of us think that the competitive system is, as a matter of fact, very nearly an election; then why not let it be so openly?

If they will consider these few points, readers will come to the conclusion that the French system is gradually drawing nearer to the British, except that in no instance will there ever be, between our hospitals, the watertight compartments so characteristic of (and perhaps detrimental to) the latter.

### HYGIENE IN FRANCE.

Alarming figures are given concerning the birth rate in France. The Government is taking steps to relieve the burden upon the shoulders of parents in allowing 50 million francs as premiums. Most of the money goes to the protection of the mother to assure care and rest at birth time. But the death rate is far too high, and we rank behind Great Britain, Holland, Germany, Sweden, and Denmark; 82 millions have been voted to fight the social scourges, 50 go to stamp out the slums, 25 to fight tuberculosis, 6 venereal diseases, and 1 cancer. The effort is far too small. For the sake of comparison, while Denmark spends 1s. 8d. a head on its antituberculosis campaign, France spends a little over one penny. Hygiene is sacrificed on the altar of the budget, and if "public health is the first concern of the statesman," as Disraeli put it, the French have still to learn that lesson.

### THE LADY DOCTOR.

M. Delbet (professor of surgery in Paris) and M. André Pascal (otherwise Dr. Henri de Rothschild) have just staged a play called *La Vocation*. Its problem is what sort of a wife the lady practitioner will prove to be. The writers are evidently misogynists, for the poor husband (useless to say that a *tertia pars* appears in the play) is driven to suicide by the unfaithfulness of his wife. The play attracted both attention and protest. It seemed to some rather unfair that two medical men should try to prove their case by selecting a character almost incredibly exceptional. We are driven back to consider the stern reality and our daily experience. The great majority of our fair confreres act in a way exactly opposite to Professor Delbet's heroine. Their call is the great call: they marry the young doctor, and as soon as they are married they are pretty careful to leave the consulting-room entirely to their mate; they give up medicine very readily, and have no idea of competing with their husbands—more especially when the night bell rings. But that would not allow the concoction of a play.

G. MONOD.

# Union of South Africa.

[FROM OUR CORRESPONDENT IN JOHANNESBURG.]

### MEDICAL, DENTAL, AND PHARMACY BILL.

THIS bill has come before Parliament periodically for the past ten years, but has always been allowed to lapse before the conclusion of the session. Its urgency has been emphasized by the different Ministers who have successively tried to guide it through the House; but the concerted efforts of persons not at present on the medical or dental registers of the provinces to become registrable has, in the past, so delayed its passage that it had invariably to be dropped.

It is a bill to consolidate and amend the laws in force in the various provinces of the Union "relating to medical practitioners, dentists, chemists and druggists, midwives, nurses, masseurs, and other classes of persons; the keeping and sale of poisons; the importation, sale, and use of habit-forming drugs, and as to other matters connected therewith; and to provide for the extension of this Act to the mandated territory of South-West Africa."

The present session has opened calmly with few fresh measures, and at last the Medical, Dental, and Pharmacy Bill shows reasonable signs of becoming law. Much time has been allowed it in the House, and at this early stage of the session, not only has the second reading been survived, but the two most contentious clauses have been passed in committee.

The second reading was moved on February 7th by the Rev. Dr. Malan, Minister of Public Health, who spoke in Afrikaans. He would not, he said, repeat the arguments which had been used on the numerous previous occasions that the bill had been before the House; it was of so urgent a nature that its passage should be no longer delayed. The need for a consolidating measure had long been felt, and the Medical and Pharmacy Boards had, even before union, had a draft consolidating measure prepared. The present bill had been before no fewer than three select committees, which had taken evidence at considerable length from all persons concerned. The matter had become urgent for various, more particularly administrative, reasons. Medical services in general throughout the Union should be uniform. To-day each province had its own Medical and Pharmacy Acts; sixteen such Acts had at present to be administered by his department, which led to considerable confusion and expense. Since the first introduction of the bill two university medical faculties had been established in South Africa, and it was essential that the medical profession and the medical faculties should

stand on properly defined relations towards each other, which was not the case to-day. An essential matter was the bringing of the trade in poisons under proper legal control. It had been said that in no other country in the world was it so easy for a person to become possessed of poisons as in South Africa; the tracing of crimes due to poisons was extremely difficult. The time had come to give effect to one of the agreements arrived at under the Versailles treaty regarding the sale of opium. This agreement was being carried out to some extent by means of regulations; but this was a matter essentially to be dealt with by legislation. A most important point was the position in the mandated territory. The South-West administration had the right to pass its own laws, but the less difference there was between the laws of the South-West and the Union the better. South-West Africa to-day had no medical laws; nurses and maternity nurses need not even be registered. The need for medical legislation was realized by South-West Africa, and after correspondence with the administrator it was agreed that legislation of the Union should also be made to apply to the South-West Protectorate. It was necessary for dental practitioners to be protected. The lack of protection in the past had resulted in the arrival of a number of dental mechanics who were permitted to do nearly everything that the fully qualified man did. They were actually better off than the qualified man, who fell under the discipline of the medical councils, in that they were allowed to advertise; unfair competition was thus created. The bill made provision for the registration of qualified nurses and masseurs. Regarding maternity nurses a great step forward would be made. In the past the heavy infantile mortality had been due largely to unqualified nursing. The number of qualified maternity nurses, especially in the rural areas, was certainly insufficient, and such areas had to be provided for. In certain specified areas nobody would be allowed to practise as a maternity nurse for remuneration unless properly certified and registered. All members were agreed as to the usefulness of the bill, and it was 95 per cent. non-contentious. The clause providing penalties for unregistered practising was the most contentious. Unqualified persons had striven to obtain under the bill rights and privileges similar to those of qualified persons. The clause last year had read that no one not duly qualified would be allowed to practise "for gain, hire, or reward, direct or indirect, or for the expectation thereof." He had met the objections raised last year against the words "hire or reward, direct or indirect, or for the expectation thereof." These words do not now appear. A person would now only be liable if he carried on while unqualified to do so "for gain," the word "gain" being duly defined in the bill.

The Minister expressed the hope that since various objections raised last year had been met much of last year's discussion would be avoided. He was, however, to be disappointed. The same arguments in favour of the registration of persons who practised "unorthodox methods of healing"—osteopaths, chiropractors, naturopaths, cancer curers—were brought up. In the backveld there are many persons who are believed to possess herbal remedies for many ills, and several country members spoke feelingly on behalf of the good being done by these persons to simple folk. These alleged remedies, when their constitution has been revealed, have almost invariably proved to be compounded of entirely inert materials. In committee many amendments are being moved, but in the present comparative leisure of the House they are being relentlessly disposed of. One member moved the following amendment:

> "Provided that any person not registered in accordance with this Act shall be entitled to treat a person who has been abandoned by a medical practitioner as incurable, and to charge for such treatment."

A division was demanded, and the amendment was defeated by 51 votes to 22. Eventually this, the most contentious clause, was passed without amendment; but the next two clauses evoked much discussion. They dealt with the penalties for practising as a dentist when unregistered, and the exemption of certain unregistered persons performing dental work prior to the commencement of the Act. By March 1st both these clauses had been adopted in committee. The remaining clauses (there are 97 in all) should be dealt with expeditiously.

Certain of the alterations made by the Minister to meet previous objections are not proving too acceptable to the medical profession. This applies particularly to the inclusion on the South African Medical Council of two laymen. Nevertheless, the feeling in the profession is that if the present bill becomes law South Africa will be provided with probably the best medical legislation in the world.

### FOOD, DRUGS, AND DISINFECTANTS BILL.

Another long overdue measure, which in the present becalmed state of Parliament has a reasonable prospect of becoming law, is the

> "bill to consolidate and amend the laws for preventing the importation or sale of foods or drugs which are unwholesome or adulterated or incorrectly or falsely described, and for regulating the labelling and sale and for preventing the incorrect or false description of disinfectants."

A consolidating measure of this kind is urgently required for administrative purposes. At present each of the four provinces has its own Act or ordinance, and there are often wide discrepancies between them. Further, their provisions are in many cases obsolete, and are easily evaded. This bill, on becoming law, will repeal the four existing provincial laws. It was introduced by the Minister of Public Health, by whose department the Act will be administered. The Secretary for Public Health, acting on the authority and instructions of the Minister, will be charged with the general execution and enforcement. As this bill is the result of consultation between experts and representatives of all parties concerned it should meet with little opposition.

### HOSPITAL SURVEY COMMITTEE.

The applications for State-aided hospital provision all over the Union have become so numerous that it has proved quite impossible for the Government to comply in all cases. In certain districts this provision is entirely inadequate, while in others the provision is almost excessive. To have some guidance in dealing with the numerous applications from towns, the Minister of Public Health has appointed a committee to make a hospital survey of the Union and investigate the hospital requirements of each of the provinces. This committee will make suggestions as to future administration, more particularly regarding the possibility of linking up and co-ordinating the work of the various institutions, nursing organizations, dispensaries, and similar bodies. The chairman of this Government Committee is Sir Edward Thornton, Director of Medical Services, and senior assistant health officer for the Union. The members include Dr. A. H. Louw, medical superintendent of the Pretoria General Hospital, Mr. R. F. Smithers, Public Service Inspector, Mr. J. R. Booth, secretary of the Kimberley Hospital, and a lay representative in each province nominated by the administrator of the province. The committee has completed its inquiry in Natal, and is at present sitting in Pretoria. It will sit a week each in Bloemfontein and Capetown. Its recommendations will be of considerable value for Government as professional guidance. It is hoped that the delimitation of hospital areas, each with a well equipped central hospital, and subsidiary smaller hospitals of the cottage type, will result from this inquiry.

## Scotland.

### PARLIAMENTARY REPRESENTATION OF THE SCOTTISH UNIVERSITIES.

THE death of Sir Henry Craik has created a vacancy in the parliamentary representation of the four Scottish universities. At the last election, when Sir Henry Craik stood in the Conservative interest, he headed the poll with 7,188 votes. His colleagues were Mr. D. M. Cowan (Liberal), with 5,011 votes, and Sir George Berry, F.R.C.S.Ed. (also Conservative), with 3,781 votes. Mr. Cowan was head master of the Higher Grade School, North Kelvinside, Glasgow, and is therefore, like Sir Henry Craik, an authority on education. Sir George Berry is consulting ophthalmic surgeon to the Edinburgh Royal Infirmary, and

has held the office of President of the Royal College of Surgeons, Edinburgh. No definite steps have yet been taken in Scotland to find a successor to Sir Henry Craik, and none will be taken until the various political organizations there have had time to consider the situation. We understand, however, that Dr. C. O. Hawthorne has already been approached, and that he is willing to consider the possibility of becoming a candidate should a general desire be expressed that he should stand. Dr. Hawthorne, who was assistant to the professor of medicine in the University of Glasgow from 1887 to 1897, has long resided in London, was chairman of the council of the Medical Graduates' College and Polyclinic from 1909 to 1914, and holds the position of consulting physician to several hospitals. He is at present Deputy Chairman of the Representative Body, and Chairman of the Science Committee of the British Medical Association. As a possible candidate the name has also been mentioned of Mr. John Buchan, author and publisher, who, although a Scot by birth, is a graduate of the University of Oxford.

### PREVENTION OF TUBERCULOSIS IN EDINBURGH.

At the annual meeting of the Royal Victoria Hospital Tuberculosis Trust, the President, Sir Ralph Anstruther, said that not only had a great deal of help been given to individuals, but the power of dealing with this disease was furthered from year to year by the operations of the Trust. Professor George M. Robertson, President of the Royal College of Physicians, said that a spirit of hopefulness permeated the report, which was a great contrast to the attitude of despair with which medical men had looked upon tuberculous disease some forty years ago when he commenced to practise medicine. He believed that there was no disease against which warfare had been so scientifically and systematically waged as against tuberculosis, and he thought that these methods might be a model for those concerned with other diseases to imitate. In this matter Edinburgh and the Royal Victoria Hospital Trust had led the way; the dairy farm it had established at Gracemount for the supply of tubercle-free milk had been a valuable object lession, so that there were now thirty other dairy farms supplying milk of this type. Again, there were far too many one- and two-roomed houses in Scotland as compared with England, for overcrowding was a most potent factor in the spread of tuberculous disease. Education in hygiene was essential for the public welfare and to lessen tuberculous disease, and no institution in the country had done more to educate the public and the medical profession than the Royal Victoria Hospital Tuberculosis Trust. Professor Sir Robert Philip, proposing a vote of thanks to the collectors for their services, referred to the hopes often raised by announcements in the press of cures for tuberculosis. He referred especially to a campaign in favour of a Swiss observer who five and a half years ago had made a promise to the speaker, as representing a powerful organization in this country, that he would submit a certain amount of his products for examination and testing. In spite of reminders, this promise had not been fulfilled, and he understood that similar promises had been made and unfulfilled to other workers. He thought it was high time that the world and the press should know the real facts in regard to this matter. The report of the Trust for 1926 refers to additions which have been made to the buildings at Southfield Sanatorium Colony, especially the completion of a sun-bath and the installation of artificial sunlight apparatus. It also refers to developments in connexion with the production of certified milk at Gracemount Farm. The ordinary income for the year was £4,328, and the expenditure £3,140.

### MOSQUITOS IN SCOTLAND.

At a meeting of the Royal Society of Edinburgh, on March 14th, Professor J. H. Ashworth, F.R.S., gave an account of the distribution of anopheline mosquitos in Scotland, so far as had at present been ascertained, for search did not appear to have been made in half the counties of Scotland. Three species of anopheles occurred in Scotland as in England—namely, *maculipennis*, *bifurcatus*, and *plumbeus*. The first was known in four localities, all in the Highlands, but many more areas would have to be examined, and a careful inspection made of cowsheds, pigsties, stables, and outhouses, which the adult mosquitos of this species frequented, especially in dark corners. *A. bifurcatus* occurred in thirty-six localities and was widespread both in the Lowlands and in the Highlands. *A. plumbeus* had been found in eight localities, all near the east coast and its estuaries. The west of Scotland, with the exception of the Clyde area, was still practically unexamined. In England *A. maculipennis* had been found to be the most abundant of the three species; but in Scotland *A. bifurcatus* was apparently the most abundant and widespread, and severe effects often followed the bite of this species, as well as of *A. plumbeus*. The mosquito had been found for the first time in Scotland in 1908, in a garden in the Grange district of Edinburgh, and it was believed that the actual breeding place was in water lodging in holes in trees. Data were lacking as to which species of anopheles had acted as transmitter of the parasite of malaria in Scotland. The areas in which ague was common in the eighteenth century were unfortunately those as to the mosquitos of which little or nothing was yet known. There was, therefore, at present no basis available for a consideration of the present distribution of anopheles in relation to the former distribution of ague. With regard to recent years, the only case of indigenous malaria in Scotland was recorded in the report for 1919 of the medical officer of health for Glasgow. A visitor had gone from Glasgow to Kirriemuir on July 17th, 1919, and thirteen days after her return to Glasgow had an attack of benign tertian malaria. Troops were quartered at Kirriemuir at the time of the visit, and it was surmised that the mosquito may have acquired the parasite from an infected soldier.

### MENTAL TESTS.

Mr. R. H. Thouless, M.A., Ph.D., lecturer on psychology at Glasgow University, in an address to the Royal Philosophical Society of Glasgow, said that the object of introducing practical work into the teaching of psychology was to give the student actual acquaintance with mental facts and to train him in scientific habits of thought and of investigation. The teacher of practical psychology must bear in mind the practical needs of his students, who would have to apply standardized tests rather than to carry out research experiments. Instruction in mental tests was, therefore, an important part of practical psychological training, and new tests were still being framed. A problem now engaging the attention of many psychologists was the discovery of tests for traits of temperament and character, so that these could be measured with accuracy comparable with that of the tests for intelligence. The temperamental tests now available were taught in laboratories, but so far their practical usefulness was limited.

### MATERNITY HOMES AND COUNTY COUNCILS.

At a meeting of the Eastern District Committee of Stirling County Council, on March 10th, an important decision was reached in regard to support of maternity homes in general hospitals by the local authorities. A recommendation by the Public Health Subcommittee had been that the authorities in Stirlingshire should hold themselves responsible for the support of ten beds in each of two proposed maternity homes at the new infirmaries of Stirling and Falkirk. The maternity scheme is estimated to involve a capital contribution to the two infirmaries of £12,000 by the combining authorities. This, together with proposed venereal disease centres at the two infirmaries, would involve about four-fifths of a penny on the public health rate. It was agreed to give the District Committee's representative powers to approve of the adoption of such a scheme, subject to satisfactory arrangements being made with the Board of Health and with the board of directors of the two infirmaries.

### GLASGOW ROYAL MATERNITY HOSPITAL.

At the annual meeting of Glasgow Royal Maternity and Women's Hospital, the Lord Provost, who presided, remarked that child welfare had come to be recognized as one of the most important obligations resting upon the community. If it were not for the facilities which

this hospital provided many of the children in the city would be born under conditions not only detrimental to their future welfare but hazardous to their lives. The community which looked after its children was the one which in the future would produce strong, robust, and vigorous manhood and womanhood to take up the responsibilities and burdens of their complex life. Dr. A. S. M. Macgregor, medical officer of health for Glasgow, made reference to the new laboratory of the hospital, which took a high place in the research work of the country; he believed that with adequate support it would become more and more useful not only to the city but to the nation.

### Air Pollution.

At a meeting of the Glasgow and West of Scotland Smoke Abatement League, Mr. W. Brownhill Smith said that domestic smoke was the greatest factor in polluting the air of Great Britain, and for this reason it was desired to extend the league to the whole of Scotland. In Glasgow a smokeless fuel as cheap as coal and as efficient as other fuels was available. He thought that the spread of information, together with some improvement in legislation to deal with cases of persistent neglect, would bring about the realization of a purification of the atmosphere, which seemed rather a hazy ideal some twenty years ago. It was decided to reorganize the league so as to form as many sections as possible in Scotland, and to establish an executive committee containing representatives of the various local authorities.

### Recent Notification Orders in Scotland.

The Scottish Board of Health has renewed the Order requiring the notification of cases of infective jaundice. In view of the prevalence of small-pox in several districts of England, the magistrates and council of the city of Edinburgh on March 3rd ordered that the Infectious Disease (Notification) Act, 1889, shall apply within the city of Edinburgh so as to include chicken-pox. This temporary Order will cease to be in force on February 29th, 1928, or at such earlier date as may be fixed by the Scottish Board of Health. The Order came into operation on March 21st.

### Influenza in Scotland.

The Scottish Board of Health announces that the part of the country most seriously affected by influenza in the past week was the south-west. The two largest Ayrshire burghs, Kilmarnock and Ayr, both had relatively high death rates, and school absences at Ayr due to influenza have fallen only slightly in number. In Ayr county the disease was prevalent in many districts, except in the northern district. In Dumfriesshire the epidemic has been moving south-westwards and is now mainly confined to the south-west corner, while Kirkcudbright has experienced a sharp rise in prevalence within the past ten days, though in both counties the northern districts have suffered less than the others. Renfrewshire has cases in all parts of the county, though the numbers are not unduly large. Greenock shows an increase of cases over the previous week's figures. In Fife, Dunfermline burgh and district show an improvement, but Kirkcaldy burgh and district both had more cases. Motherwell and Wishaw has once more to report a heavier incidence. Elsewhere the epidemic is rapidly dying out. In Dundee the outbreak appears to be over, and in Aberdeen the prevalence of influenza is now normal for the time of the year. Equally encouraging reports have been received from other parts of the country, and there is ground for hoping that the end of the outbreak in Scotland is in sight.

## Ireland.

### Ulster Medical Society.

The eighth meeting of the session was held in the Medical Institute, Belfast, on March 10th. The President (Dr. Nolan, Downpatrick), who was in the chair, presented Sir Thomas Houston with an illuminated vellum certificate of honorary fellowship of the society, and Sir Thomas expressed his thanks. Dr. E. P. Cumberbatch, director of the electrotherapeutic department of St. Bartholomew's Hospital, London, gave an address on recent advances of diathermy in medicine and surgery. He dealt with the treatment of chronic infections in gynaecological practice and with arthritis, both by general and local application, in surgical work and in medical conditions, hyperpiesia, sciatica, etc. Several questions were asked, and Dr. Cumberbatch gave answers. Professor R. J. Johnstone proposed a vote of thanks to Dr. Cumberbatch, which was seconded by Professor Fullerton and passed with applause.

### Coroners Amendment Act (Free State).

The Coroners Amendment Act (1927), which has been recently passed by the Dail, contains many sections which are of interest to medical men practising in the Free State. Some important changes are made in the sections of the Coroners (Ireland) Act, 1846. The following sections are of special interest to medical practitioners:

*Section 2.*—(1) In any case (other than those provided for by Section 1 of this Act) in which the coroner is informed of the death within his district of a person who was not attended throughout his last illness by a duly qualified medical practitioner or that a medical certificate of the cause of death of any person is not procurable, he may inquire into the circumstances of the death of such person, and if he is unable to ascertain the cause of such death he may if he shall think fit hold an inquest for the purpose of ascertaining the cause of such death. The coroner may, at any time after he is informed of the death of any such person and pending any such inquiry, make an order for the burial of the body of any such person.

*Section 2.*—(2) It shall be the duty of the local superintendent or other officer of the Civic Guards, in case he becomes aware of the death within the district of a coroner of any person who was not attended throughout his last illness by a duly qualified medical practitioner, or in whose case a medical certificate of the cause of death is not procurable, to inform the coroner of such death.

*Section 3.*—(1) Subject to the provisions of this Section a coroner within whose district the dead body of a person is lying may, in lieu of summoning a jury in the manner required by Section 23 of the Coroners (Ireland) Act, 1846, for the purpose of inquiring into the death of that person, hold an inquest on the body without a jury.

*Section 3.*—(2) If it appears to the coroner either before he proceeds to hold an inquest or in the course of an inquest begun without a jury, that there is reason to suspect (*a*) that the deceased came by his death by murder, manslaughter, or infanticide; or (*b*) that the death occurred in prison or in such place or in such circumstances as to require an inquest under any Act other than the Coroners (Ireland) Act, 1846; or (*c*) that the death was caused by an accident, poisoning, or disease, notice of which is required to be given to a Government department or to any inspector or other officer of a Government department, under or in pursuance of any Act; or (*d*) that the death was caused by an accident arising out of the use of a vehicle in a street or public highway; or (*e*) that the death occurred in circumstances the continuance or possible recurrence of which is prejudicial to the health or safety of the public or any section of the public; he shall proceed in the manner required by the Coroners (Ireland) Act, 1846, and in any other case if it appears to him, either before he proceeds to hold an inquest or in the course of an inquest begun without a jury, that there is any reason for summoning a jury, he may proceed to summon a jury in the manner aforesaid.

*Section 4.*—In the case of an inquest held by a coroner with a jury, such jury shall consist of not less than six and not more than twelve persons.

*Section 11.*—(1) Where a coroner is informed that the dead body of a person is lying within his district and there is reasonable cause to suspect that the person has died a sudden death of which the cause is unknown, if the coroner is of opinion that a *post-mortem* examination may prove an inquest to be unnecessary, he may cause such examination to be made and the result to be reported to him, and for the purposes of the examination the coroner and any person authorized by him to conduct the examination shall have the like powers, authorities, and immunities as if the examination were an examination directed by the coroner at an inquest upon the body of the deceased.

*Section 11.*—(2) If as a result of such an examination as aforesaid the coroner is satisfied that an inquest is unnecessary, he shall send to the registrar of deaths whose duty it is to register the death a certificate under his hand stating the cause of death as disclosed by the report, and the registrar shall make an entry in the register accordingly.

*Section 12.*—(1) Without prejudice to the power of a coroner holding an inquest to direct a medical witness whom he may summon under Section 33 of the Coroners (Ireland) Act, 1846, to make a *post-mortem* examination of the body of the deceased, the coroner may, at any time after he has decided to hold an inquest, inform the Minister for Justice by writing under his hand that it is in his opinion desirable to have made (*a*) a *post-mortem* examination of the body of the deceased; or (*b*) a special examination by way of analysis, test, or otherwise of such parts or contents of the body or such other substances or things as ought, in the opinion of the coroner, to be submitted to analyses, tests, or other special examination with a view to ascertaining how the deceased came by his death; or to have both such examinations made, at the same time stating his reasons for such opinion;

and the Minister for Justice may thereupon appoint a legally qualified medical practitioner to make such *post-mortem* examination or special examination or may appoint any other person whom he considers to possess special qualifications for making such a special examination as aforesaid to make the special examination.

*Section 12.*—(3) The fee payable in respect of any such *post-mortem* or special examination shall be a sum not exceeding ten guineas, or such larger sum as the coroner shall with the approval of the Minister of Justice determine, and if the person making such *post-mortem* or special examination is summoned by the coroner as a witness to attend an inquest he shall be given such further allowance as the coroner with the approval of the Minister for Justice shall determine.

*Section 13.*—(1) The fees payable to a legally qualified medical practitioner who has made any *post-mortem* examination by the direction or at the request of a coroner, or who has attended an inquest in obedience to a summons of a coroner under the Coroners (Ireland) Act, 1846, or this Act, shall (save as in this Act otherwise expressly provided) be as follows: (*a*) for attending to give evidence at any inquest whereat no *post-mortem* examination has been made by the practitioner, not exceeding two guineas; (*b*) for making a *post-mortem* examination of the body of the deceased and reporting the result thereof to the coroner without attending to give evidence at an inquest, not exceeding three guineas; and (*c*) for making a *post-mortem* examination of the body of the deceased (including the making of a report, if any, of the result thereof to the coroner) and for attending to give evidence at an inquest on the body, not exceeding four guineas: Provided that no fee or remuneration shall be paid to a medical practitioner for the purpose of a *post-mortem* examination instituted without the previous direction or request of the coroner.

*Section 13.*—(2) In the case of any other witness attending to give evidence at an inquest, if the coroner shall certify that special circumstances exist he shall allow such sum for expenses as he shall consider reasonable, not exceeding in any one case the sum of five pounds.

# England and Wales.

### BIRMINGHAM HOSPITALS.

THE proposal to construct a new hospital centre at Edgbaston was discussed at the annual meeting of governors of the Birmingham General Hospital on March 16th. A site near the University has been offered by Messrs. Cadbury, and it is suggested that this should be shared by the General Hospital and the Queen's Hospital, which would eventually amalgamate. With this in view both hospitals have abandoned the idea of extending their present buildings, with the exception of a temporary ward which is to be built in the grounds of the Birmingham General Hospital in order to reduce the long waiting list of patients. A new building for the treatment of venereal diseases is also to be erected by this hospital, but the cost of this will be borne by the public health authorities concerned and not by the hospital. The annual report of the Birmingham General Hospital shows that the accumulated deficit on December 31st, 1926, was £23,435. The new contributory scheme which was originally suggested by this hospital, and which is now in the hands of the Hospitals Council of the city, will shortly come into operation, and will, it is hoped, be effective in placing all the Birmingham hospitals on a more satisfactory financial footing. This scheme aims at co-ordinating the various sources of hospital income. It is proposed to form a central managing committee, with subsidiary sections in the various wards of the city. The Hospital Saturday Fund will constitute the principal branch industrial contributors' scheme for employers and employees, and will pay to the central committee the total received, less amounts reserved for the special work of the Fund in connexion with such activities as the provision of convalescent home treatment and surgical aid. Contributions of 2d. weekly are invited from employees, and employers are asked to subscribe a sum equal to at least one-third of the total amount so obtained. The hospitals will still be open as before to patients too poor to contribute. Private individuals with limited incomes will be able to join a subdivision of the scheme, and so become eligible for free hospital treatment. It is hoped that each hospital will make a maintenance charge for other patients who are not contributors, but who could have afforded to pay at least 2d. a week. The new arrangement is not intended to interfere in any way with the systematic appeal by individual hospitals for subscriptions and donations from any sources not embraced by the scheme.

### MEDICAL STUDENTS' VISIT TO BATH.

A party of medical students from Birmingham University, accompanied by Professor Douglas Stanley, professor of pharmacology and therapeutics, and other members of the staff, visited Bath on March 19th, to study the spa treatment of rheumatic and other diseases. After lunch the party assembled in the Pump Room, where Dr. A. Gordon Watson described the types of cases in which spa treatment is indicated. The bathing establishment was inspected under the guidance of the director of baths, Mr. John Hatton, and demonstrations were given of the various baths, douches, and other methods employed. The Royal Mineral Water Hospital was then visited, and cases were demonstrated by Drs. Rupert Waterhouse, R. G. Gordon, James Lindsay, H. Clulow Nixon, and Litt. After a short motor tour of the city to see the historic houses and the Georgian architecture of Bath, the Roman baths were visited. Before the party returned to Birmingham tea was served on the Roman Promenade.

### HOSPITAL SATURDAY FUND.

A social gathering of the Hospital Saturday Fund was held in London at the Guildhall on March 16th. The Lord Mayor, president of the Fund, commented on the satisfactory progress during the fifty years of its existence, and made special reference to the valuable help it had given in maintaining the voluntary system. Its organization of the collection of subscriptions in workshops, factories, and offices had resulted in the people generally taking an increasingly keen interest in the work of the hospitals and recognizing their responsibility in the matters of maintenance and extension. The Earl of Malmesbury, chairman of the Fund, said that the income last year had amounted to £109,677, of which £30,577 had been received from patients, £4,127 from the General Post Office, £2,520 from the London, Midland, and Scottish Railway, and £1,823 from the London and North-Eastern Railway. Expansion of the work of the Fund had rendered it necessary to obtain new premises at a cost of £7,000. Nearly 47,000 letters had been issued for hospitals, convalescent homes, and sanatoriums, while 21,773 grants had been made for surgical appliances. He added that the attendance of the Lord Mayor at this social gathering which had replaced the annual dinners held in previous years was an illustration of the close connexion between the Mansion House and the Fund.

# Correspondence.

### SLEEP IN HOSPITAL.

SIR,—Many a true word is said in jest, and I should like therefore to draw the attention of your readers to an article in *Punch* (March 2nd, 1927), entitled "The Wash; or, Dawn in Hospital," by "A. P. H."

The art and science of nursing has become so nearly perfect that nobody bothers to inquire whether it could be improved. The question, however, of sleep is, I venture to think, a matter to which not nearly enough attention is given. If this matter is discussed with the nursing staff they always point out that the present routine of the hospital makes it imperative that washing should start in the very early hours of the morning. This enslavement to routine was carried out to such an extent in the war that I was obliged to ask my commanding officer to make it a rule that no washing should start before 6 a.m., except for therapeutic measures. At that time the number of nurses in the casualty clearing stations was very small, and when there was a particularly busy "strafe" on it was not an uncommon sight to see the tents lit up at 3 a.m. and washing commenced. We were told that the seriously wounded man was not washed, but his companions on either side who were slightly wounded and feeling full of joy at being away from the firing line used to have an animated conversation, so that sleep was impossible.

Many of your readers, like myself, have experienced the joy of a morning sleep after a restless night, and have also been rudely awakened in the early hours for ablutions.—I am, etc.,

London, W.1, March 21st. MALCOLM DONALDSON.

## THE THYROID AND MANGANESE TREATMENT IN ACUTE PNEUMONIA.

SIR,—The letter of your correspondent, Dr. R. O. Adamson in the JOURNAL of March 19th (p. 539), encourages me to offer an observation which appeared to me to be pertinent when I read the article of Dr. Roche to which he refers, wherein is advanced the therapeutic advantages of thyroid and manganese in acute pneumonia as advocated by Dr. Nott.

Lobar pneumonia, a self-limited disease, and one in which I venture to say one's prognostic deficiencies are only too often displayed, is, as Dr. Adamson suggests, an excellent opportunity to exhibit the apparent advantage of almost any treatment. During the war I enjoyed the exceptional opportunity of observing lobar pneumonia on a very large scale.[1] In two and a half years I saw 558 cases, the whole of the treatment of which I personally undertook or supervised. The mortality rate of the whole series was 10.9 per cent. I recollect, as bearing upon this subject, that at one time 53 consecutive cases, including several of the greatest severity, were treated without a death, and, if only one fatal result be included, this series numbered 94 consecutive cases. I think it would have been not merely reasonable, it would have been irresistible had any special or peculiar treatment been adopted, to have allocated to such treatment the credit of so exceptionally high a recovery rate. Yet at no time was any but symptomatic treatment employed.

Universal satisfaction will be expressed if Dr. Nott's treatment can prove to be a specific or at least a valuable adjuvant in the treatment of lobar pneumonia. But I can only agree with Dr. Adamson that the greatest care must be exercised in deducing the effects of any treatment.—I am, etc.,

London, W.1, March 19th. ADOLPHE ABRAHAMS.

## THE USE OF TUBERCULIN.

SIR,—A perusal of the article on tuberculin in the BRITISH MEDICAL JOURNAL of February 19th (p. 340) led me to inquire what investigations into the use of this substance had been carried out in this country in recent years. I was surprised to find that there exists a committee, appointed, I think, in 1920, by the Medical Research Council, for the purpose of investigating the use of tuberculin in the diagnosis and treatment of human tuberculosis. It is true that I have failed to discover any reports made by this committee on human tuberculosis, though there are two reports on the use of tuberculin in cattle. But inasmuch as the three experts stated by you to have been appointed to investigate Dr. Camac Wilkinson's methods are members of the committee, something presumably has been done about the human variety of the disease during the seven years of the committee's existence. It seems a pity that some sort of report on the original reference to the committee is not yet available.

If, however, the committee finds its hands too full with the application of tuberculin to cattle, may I suggest that the National Association for the Prevention of Tuberculosis might usefully turn its attention to research? If I am correct in supposing that this association is meditating another campaign of what is called "propaganda," I venture to think that the funds it is setting out to collect might prove of greater value if devoted, say, to helping to establish an institute such as that suggested by Dr. Camac Wilkinson in a letter to the *Times* on March 15th. Propaganda is somewhat hackneyed; and, under present limited conditions of knowledge, has been carried about as far as the circumstances justify.—I am, etc.,

Felsted, March 21st. CHARLES BUTTAR.

## THE PRACTICAL VALUE OF INSULIN.

SIR,—In the JOURNAL of March 19th (p. 530) you record the verdict of Professor Marcel Labbé that no case of true diabetes proves refractory to insulin. I should have agreed with him two months ago, but since then I have had under close observation a lad of 19 who is extraordinarily resistant to insulin. On a fixed diet of 50 grams carbohydrate, 80 grams protein, and 150 grams fat, 220 units of insulin a day failed to reduce the blood sugar to normal and to keep him sugar-free, and it required 400 units to reduce his blood sugar to normal. In my former experience such a diet has never required more than 60 to 70 units a day in the severest case of diabetes. Undoubtedly insulin had some effect on him, because when it was omitted he developed coma in a week, and was rescued by large doses of insulin. All the factors which are known to counteract insulin appear to be absent in his case. Another similar case is recorded by two careful workers, Mauriac and Aubertin (*Presse Médicale*, December 29th, 1926).

The above case will be reported more fully later, but in the meantime it may be of interest to know that cases extremely resistant to insulin do occur for no known reason.—I am, etc.,

R. D. LAWRENCE, M.D., M.R.C.P.

London, W.1, March 19th.

[1] *Lancet*, 1920, ii, 543.

## THE MODERN TREATMENT OF HERNIA.

SIR,—Mr. M. Fitzmaurice-Kelly's interesting remarks on this subject (BRITISH MEDICAL JOURNAL, March 12th, p. 491) seem to call for a brief reply. I am very glad to know that he has already carried out the treatment of umbilical hernia by a combination of Mayo's and Gallie's technique just as I suggested in my paper. I feel sure that this is an advance in the surgery of hernia. Meanwhile I have learnt that even this method will not meet the requirements of every case. I have recently had occasion to operate on a very obese man for an enormous obstructed hernia in the region of the umbilicus. The hernia consisted of two peritoneal sacs—one small and one very large. The size of the resulting opening in the abdominal wall, combined with the fact that local anaesthesia does not give general muscular relaxation, made it impossible to obtain any real overlapping of aponeurosis. I therefore employed Gallie's ordinary technique as described for treating any ventral hernia, with a very satisfactory result.

Femoral hernia seen in profile.

With regard to Mr. Fitzmaurice-Kelly's theoretical objection to the operation which I have described for the larger femoral hernias, I am afraid that I have not succeeded in making quite clear the rationale of the procedure. The cure of the hernia is not dependent solely upon the integrity of the suture line between the aponeurotic flap and Cooper's ligament. The sutures are merely holding the flap in its new position and are not under any tension. The flap is forming a curtain *behind* the plane of the crural canal over an area larger than the actual opening, so that pressure from the abdomen will impinge on the flap as a whole and will not put a strain on the suture line in particular. The use of a fascial suture for fixing the flap is therefore a luxury rather than a necessity. I can only repeat that the method I described was used for the more difficult cases and has stood the test of time, some of the patients being men employed on heavy work. I may also point out that Mr. Fitzmaurice-Kelly's method does not overcome the only possible objection to the inguinal approach—namely, that a breach is made in the transversalis fascia in the floor of the inguinal canal, whereas the other method automatically deals with this at the same time.

I do not wish, however, to claim finality for this operation, as there are patients for whom it would be inadequate. Since publishing my paper I have operated on the largest femoral hernia that I have ever seen. The sac was eight inches in diameter, as shown in the accompanying profile view, and contained the greater part of the small

intestine. Gallie's full technique was employed under local anaesthesia. The lower edges of the internal oblique muscle and conjoint tendon were sutured along the crest of the pubes and this was oversewn with two further layers of fascial sutures, the inguinal ligament being incorporated in these layers. The patient, a woman of 66, was undisturbed by the operation, and the result appears to be excellent. Perhaps even Mr. Fitzmaurice-Kelly would have found it necessary to clear this sac from below as a preliminary!—I am, etc.,

London, W.1, March 12th. GEOFFREY KEYNES.

## INFLUENCE OF MANURIAL CONDITIONS ON THE VITAMIN CONTENT OF GRAIN.

SIR,—The interesting and highly suggestive work on the above subject by Lieut.-Colonel McCarrison, referred to in your issue of March 19th (p. 530), raises a subject of far-reaching interest and medical importance. Your note emphasizes the probable value of the work in relation to dietary and disease in the East; it is advisable to keep in view the possibility that similar, although less pronounced, conditions of an allied nature may be operative in this country.

Within the past few years the opinion has been expressed by not a few thoughtful agriculturists that the widespread use of artificial chemical manures has exerted an unfavourable influence on the amount and value of the crops. The extension of the use of artificial manures in this country in the past twenty-five years has been remarkable, and there is some reason for thinking that this may have tended to exhaust the soil of some of the ingredients required for obtaining the maximum yield of grain of the best quality. My personal experience of this subject for some years past has forced me to share this opinion. McCarrison's work will be useful in drawing attention to the important problem of "deficiency" in relation to nutrition and disease in its widest biological aspects.—I am, etc.,

Edinburgh, March 21st. CHALMERS WATSON, M.D.

## THE ORIGIN OF SYPHILIS.

SIR,—I have read with interest the article on "The Origin of Syphilis: New World or Old?" as published in your issue of December 25th, 1926 (p. 1235). This editorial inclines to the view that the American theory of origin of the disease appears to be weak from the evidences summarized. I am moved, therefore, to offer certain additional evidence supporting the "American theory." My colleague, Dr. Hugh J. Means, roentgenologist, has recently published an article entitled "A roentgenological study of the skeletal remains of the prehistoric mound builder Indians of Ohio" (*American Journal of Roentgenology and Radium Therapy*, vol. xii, No. 4, pp. 359-367, April, 1925), in which he shows (Plate I) illustrations of seven long bones which he considers exhibit evidence of syphilis in different stages of the disease. Dr. Means took advantage of the rich collection of skeletal remains of mound builders in the Ohio State Archeological and Historical Museum. "This investigation was undertaken to determine if an extinct race, apparently having had no contact with the later tribes and the white race, would show the same pathological conditions as are found to-day." He used the roentgenological method only, this being the first time this method has been used in connexion with this collection. Naturally, lesions causing general decalcification could not be demonstrated, so that malignancies, tuberculosis, and other afflictions where repair had not taken place are not found demonstrated. Among the bone diseases, Dr. Means claims:

"There is no doubt that lues existed among the mound builders of Ohio. Definite gross and roentgenological evidence of syphilis was found in three skeletons. They presented varying degrees of involvement, from a simple periosteal thickening and roughening on the crest of the tibia, to thickened ivory-like bone invading the medullary canal with gumma formation. Two others were strongly suspicious and several more showed a possibility. Of the three positive cases, two occurred in one tribe and the third in another. The tibias were involved in all three individuals, in one case both, in another one, and in the more advanced case a tibia and ulna. Many more positive specimens would probably have been found if the skeletons had been in a less fragmentary condition."

The article takes up also evidences of Pott's disease, rickets, joint infections, osteitis deformans, coxa vara, hypertrophic arthritis, impacted third molar in ramus of mandible, and various fractures, as well as wounding agencies such as arrows and spears. Among conclusions: "It has been clearly proven that syphilis existed and was a fairly common disease."—I am, etc.,

EMERY R. HAYHURST, M.D., Ph.D.,
Professor of Hygiene, Ohio State University.

Columbus, March 7th.

## SCIATICA.

SIR,—It is possible that some misapprehension may arise from perusal of the condensed account in the BRITISH MEDICAL JOURNAL for March 19th (p. 522) of Professor Vittorio Putti's lecture on a subject which, it has been truly observed, has hitherto attracted but little attention in England, although very closely studied by the French school of neurologists and osteologists. The word "névrodocite" was used more than ten years ago by Sicard (*Bull. et mém. soc. méd. des hôp. de Paris*, November 3rd, 1916; *Presse méd.*, January 7th, 1918) to express the alteration set up in nerve structures by their compression in bony, fibrous, and aponeurotic sheaths and canals. The word "funiculite" was used by the same observer so far back as 1913 (*Mouvement médical*, August, 1913) to indicate a neurodocitis due to compression of the united spinal roots in an intervertebral foramen.

An admirable account is given in André Léri's recently published work *Les affections de la colonne vertébrale*, embodying the work which the author and his colleagues have carried out during many years. Meynadier's *Thèse de Paris*, 1923 (La Sacralisation Douloureuse), gives what is perhaps the most complete bibliography of the subject that is easily accessible to English readers.—I am, etc.,

London, W.1, March 19th. F. G. CROOKSHANK.

## INFLUENZA AND ALBUMINURIA OF PREGNANCY.

SIR,—Dr. Gutch (BRITISH MEDICAL JOURNAL, March 19th, p. 543) refers to a relationship between influenza and the albuminuria of pregnancy, amounting in his opinion not improbably to cause and effect. How explain it? The albuminuria is not due to the toxin of influenza, for "the pregnant woman only is affected in this way." Nor is it due to a too generous diet: Dr. Gutch has abandoned that view. Can the persistent cough explain it?

Two years ago, during a similar epidemic, a primigravida, 30 years of age, and seven months pregnant, developed a "terrible" cough and became pre-eclamptic; general oedema ensued, and the urine became scanty (8 ounces in twenty-four hours) and highly albuminous. The cough preceded the pre-eclampsia, and in my opinion caused it. But how?

In 1922, considering the proximate cause of the toxaemia of the pernicious vomiting of pregnancy,[1] the conception that vomiting is a pathological force arose and became defined. It was easy to see that the compressions of the liver, produced by the acts of vomiting, interfered with the blood flow through the liver; and that the kidneys were similarly affected by the same acts and in the same way, to the extent that they could not prevent albumin escaping. Thus, though greatly interested, I was not greatly surprised to find my patient, apparently quite well until she got influenza, become more or less rapidly oedematous with the rise and persistence of her cough, which she described as "terrible."

We have but to think of the enormous rise of pressure in the abdomen produced by cough, and to understand that with the abdomen distended by a pregnant uterus, the compression of the kidneys produced by cough must be greater than in those with flat abdomen, to see that the blood flow through the kidneys during each cough—especially in pregnancy—must be much impeded. And no great stretch of the imagination is necessary to allow the possibility that

[1] *Lancet*, 1922, i, 867.

a succession of such forces may produce albuminuria: thus, in athletes, albuminuria is produced by rowing a race (Collier). In the latter case, the kidneys become ischaemic through the violence and rapid repetition of the abdominal contractions (in which the diaphragm participates). In the case of a "terrible" and persistent cough, with the abdomen distended by pregnancy and the abdominal muscles in a state of greater tonic contraction than normal (as I have shown is the case in pregnancy),[2] the more marked implication of the kidneys in pregnancy and the relationship referred to by Dr. Gutch become of easy interpretation.—I am, etc.,

Rugby, March 20th. R. H. PARAMORE, F.R.C.S.Eng.

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SIR,—Dr. John Gutch ends his letter on this subject in your issue of March 19th (p. 543) with the question, "and why it is that the pregnant woman only is affected in this way?" It has long been my experience that albuminuria, generally of slight degree, is so common in cases of influenza that it should be expected to be among the symptoms of any case of that infection. I have been surprised that this is not more generally recognized. —I am, etc.,

Manchester, March 20th. P. MCDOUGALL.

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## SPASTIC PARAPLEGIA.

SIR,—In the discussion on spastic paralysis reported in the JOURNAL of December 25th, 1926 (p. 1208), reference is made to the form of treatment introduced by me—that is, sympathetic ramisection (*Medical Journal of Australia*, January 26th, 1924).

In the first place, I would emphasize that ramisection was not based upon the hypothesis that the functions of movement and posture are performed by entirely different sets of muscle fibres, as stated by Mr. Bankart, but upon experimental observations made by me upon the effect of the removal of the sympathetic nerves from the left hind limbs of normal, spinal, and decerebrate goats. The film shown by Dr. Beattie illustrated the results of these experiments; and in reply to Dr. Adie and Dr. Walshe I have to state that the effects shown were constant not only in goats but in cats and rabbits also. In addition, Kuntz and Kerper were able to produce similar results in the dog (*American Journal of Physiology*, March, 1926).

In the second place, Mr. Bankart considers that the operations of sympathetic ramisection have now been given a fair trial, but his evidence is far from satisfactory. On examining his own statements the reasons for his failure are obvious. He has done the operation ten times; "in about one-half the cases" there was no appreciable effect upon muscle tone or upon the vascular condition of the limb. It should be obvious from this statement that the structures divided by Mr. Bankart were not sympathetic nerves, but this apparently escaped the notice of the neurological and physiological critics at the meeting at Nottingham, and at the meeting of the Royal Society of Medicine, reported in *Brain*, vol. 49, Part 1, p. 135. If this result was obtained by Mr. Bankart in "about one-half the cases," is it not fair to suggest an error in technique or an incomplete technique in the other half? Mr. Bankart says that his experience is similar to that of those who have tried the operation in America. He has apparently not seen the statement of Dr. von Lackum of the New York Orthopaedic Hospital (*Journal of Bone and Joint Surgery*), in which he says that the usefulness of grey "ramisectomy" in selected cases is, in his opinion, no longer in doubt, and, further, that a definite relief from spasticity will be noted and a marked increase in voluntary control will be gained.

He is also not aware that ramisection, or a modification, is practised successfully at the Mayo Clinic, and that successful results have been obtained at the Toronto, San Francisco, and Los Angeles children's hospitals. From my own experience in Australia I am convinced that unsuccessful results can always be accounted for by the improper selection of cases, or by an error in technique.—I am, etc.,

March 2nd. N. D. ROYLE.

[2] *Proc. Roy. Soc. Med.*, Obstet. and Gyn. Sec., 1913, vi, 309.

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## OPTICIANS AND OPHTHALMIC BENEFIT.

SIR,—I am a whole-hearted opponent of all types of unqualified practitioners, and am in hearty agreement with the principle of Dr. Pocock's plea (p. 544) that societies should discontinue their practice of advising their members to go to qualified opticians. If any members of the general public ever peruse medical literature, however, I do not think they would be very favourably impressed with our cause if they found one of our leading medical journals publishing, in a prominent position, an isolated case in which a qualified optician showed an error of judgement in prescribing spectacles.

I once failed to diagnose, until after several days' delay, a case of ambulatory pneumonia; on another occasion I diagnosed a bronchiectatic cavity as an empyema, and aspirated—with disastrous results. I think these errors were far more serious than that made by the optician, and yet I should feel rather hurt if any colleague published these cases with an implied suggestion that patients should be advised not to consult men of my type! There is no evidence that the optician did not employ "reasonable care and skill," and if we are going to endeavour to damn the unqualified practitioner by promoting a principle that members of a profession must never make a mistake, I am afraid that we shall find ourselves "armed with a boomerang."—I am, etc.,

T. W. PRESTON, M.B., M.R.C.P.

London, S.E.19, March 19th.

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## "BIRTH CONTROL."

SIR,—The review in your issue of March 12th (p. 475) of the book *Medical Views on Birth Control* includes, in a composite summary of this very one-sided symposium, the opinion that, beyond a considerable number of cases in which there are definite medical indications for the prevention of conception, it is at least extremely doubtful whether a more general practice of this can be justified on any grounds. Surely, if contraception could be and were abolished, the birth rate would rise to over 30 per 1,000 per annum; and, to avoid a decline of our average duration of life, we should therefore require to maintain a natural increase of population of over 20 per 1,000 per annum, which is only possible in new countries. Taking the world as a whole, one may say that its food supply is increased so slowly that only a very small proportion of couples can get really sufficient food for themselves and more than three children.—I am, etc.,

London, S.W.7, March 12th. B. DUNLOP.

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## THE RHEUMATIC CHILD.

SIR,—Perhaps you will allow me to point out that the report on rheumatic fever about which you comment in the last issue of the BRITISH MEDICAL JOURNAL corroborates what I stated at the Conference on Cripples held in the British Medical Association's House last November, and published in the last issue of the *Cripples Journal*.

I pointed out that bad teeth, enlarged tonsils, damp houses, etc., may be associated with, but are not the cause of, rheumatic fever, whilst the one and only thing common to all these cases is malnutrition, whereby they get none of the lime-bearing foods such as milk, eggs, and cheese. In addition they aggravate this want of lime by partaking of acids like vinegar, sauces, pickles, and lemons.

Where two or three in a family fall a prey it is always found that their feeding habits differ from those who are not attacked, the latter liking and drinking milk.—I am, etc.,

Swansea, March 13th. G. ARBOUR STEPHENS.

# Obituary.

## JOHN BROWNLEE, M.D., D.Sc., F.R.F.P.S.,

Director of the Department of Statistics, Medical Research Council.

THE death, from bronchopneumonia, after little more than forty-eight hours' illness, of Dr. John Brownlee, which occurred on March 20th, will come as a great shock to his numerous friends. Dr. Brownlee had not enjoyed robust health for some years, but he was actively engaged in research work only a few days ago and apparently in his usual health and spirits.

John Brownlee was born in 1868, a son of the manse, and was educated in the University of Glasgow, where he had a brilliant career, securing first class honours in mathematics and natural philosophy in his arts course and commendation both for M.B. and M.D. degrees. He graduated M.A. in 1889, M.B. in 1897, M.D. in 1898, and D.Sc. in 1907. He was also a D.P.H. of Cambridge, and some years ago the Faculty of Physicians and Surgeons of Glasgow conferred upon him the distinction of election to the Fellowship without examination. After graduation and the usual resident posts, Brownlee spent two years as resident physician in the Belvidere and Kennedy Street Fever Hospitals, and then nine months as pupil-assistant to the late Dr. J. B. Russell in the Glasgow Health Office. This experience impressed him deeply, and Russell was for him one of those great men who, in Helmholtz's words, "alter one's whole scale of values." In 1899 Brownlee was appointed medical officer of health for Guernsey, and although he held the post only eighteen months this stay in an environment very different from that of a great industrial city also affected him deeply. In 1900 Brownlee returned to Glasgow as physician superintendent of the Belvidere Fever Hospital, and for the next fourteen years (he transferred from the Belvidere to the Ruchill Hospital in 1908) he was mainly engaged in the clinical and administrative work of a large hospital for infectious diseases. In this work he was conspicuously successful. Although not a fluent lecturer he was a wonderfully inspiring clinical teacher, and the writer of this notice well remembers the enthusiasm with which an old pupil of Brownlee, whom he messed with during the war, spoke of the Ruchill teaching. Brownlee found time, however, to apply his mathematical ability to medical and biological problems, and before his appointment by the Medical Research Council, in 1914, to be the first director of their statistical department, he had already published several important papers of a biometric character and won a reputation as a prominent exponent of the statistical method. From 1914 onwards Brownlee's professional interests were statistical, and a bibliography of his work since 1913 includes no fewer than forty-five titles; many of these papers, such as his memoir on the epidemiology of phthisis and his investigation of the periodicity of epidemics of measles, involved an immense amount of detailed analysis and are of permanent scientific value.

It is not possible, in a note written within a few hours of the loss of a great investigator, adequately to characterize the nature and value of his contribution to knowledge: it is hardly respectful even to try to do so. Perhaps it may be said that the real value of Brownlee's life work was not so much in any important specific addition to knowledge as in the general character, the *quality* of his work. This may at first seem a hard saying, for in the mere A B C of literary composition Brownlee was deficient. His literary style was not very attractive, and he had none of the power so conspicuous in, for instance, the writings of Mr. Udny Yule, of expressing a difficult mathematical argument in such a way that no attentive reader can fail to grasp it.

But any reader who cares to surmount the superficial difficulties of Brownlee's style is inevitably conscious of a certain philosophical breadth of treatment which he will seek in vain in the writings of most statistical epidemiologists. The memoir on the epidemiology of phthisis or the report on the mortalities of birth, infancy, and childhood well illustrates this quality. A reader may dissent from every particular proposition and yet feel that the author has placed him under a great obligation—has obliged him to look at the problems from a loftier standpoint. There is a great gulf between acuteness and sagacity. Of that acuteness which enables a man to solve neatly particular problems—the mental analogue of the precision with which a terrier nips rats—Brownlee had little; he was not acute in the narrow sense, but he was something more—he was sagacious. Of course, he had the defects of his qualities. People who did not know him intimately and sought guidance on some specific problem might be, and frequently were, exasperated by the way he would pass from topic to topic and leave the difficulty just where it was at first. But nobody who knew him intimately could fail to be struck by the immense range of his erudition or to be charmed by the simplicity of his character. It was easy to be vexed by his discursiveness when one wanted to have his opinion on a specific point, but one felt that, however discursive he might be, his influence on his associates was extraordinarily good, in that his ideal was that of a pure scholar. He was singularly free from personal jealousy or vulgar ambition, and if not in the formal sense a great teacher of statistical epidemiology, his writings and example have done, and will continue to do, great good. Many years ago Dr. Campbell Munro wrote: "Dr. Brownlee is a man of high intellectual endowments, of great breadth of view, of brilliant scientific attainments—a man who is certain to attain a high position in the public health speciality. He is a man of high moral purpose and elevation of character, and, with all his attainments, of singular modesty and simplicity." That might fairly stand for Brownlee's epitaph.

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## SIR HENRY CRAIK, Bt., K.C.B., M.P.

THE death, on March 16th, of Sir Henry Craik removes from the House of Commons a member of a type not common in that assembly, but of great importance to its efficiency. He had sat in Parliament since 1906, when he was elected to represent the Universities of Glasgow and Aberdeen. After the redistribution in 1918 he became one of the three representatives of the four combined Scottish universities. He was born in 1846. He was educated at the High School at Glasgow, whence he went to Balliol as a scholar and exhibitioner. Immediately after taking his degree—which he did with honours in classics and history—he entered the Education Department, became a senior examiner in 1878, and secretary of the Scottish Education Department, Whitehall, in 1885. He retired in 1904. He was Conservative in politics, but kept an open mind, as becomes a university representative. Apart from politics he fully realized his responsibility to his constituents. He was always ready to study and, if he could approve, to support the views of the medical profession from his seat in Parliament, and to this Dr. Cox bears witness below. His chief contribution to literature was perhaps his book on *The State and Education*, a subject on which, by his long experience, he was well entitled to speak. But he also wrote *A Century of Scottish History* (1745-1843), with a discussion of the effects of the disruption in the later year. He edited also a series of volumes entitled *English Prose Selections*, writing introductions to four of the five volumes.

Dr. Cox, Medical Secretary of the British Medical Association, writes: Sir Henry Craik was a good friend of the medical profession and of our Association, and I have reason to know that he was pleased and proud when we made him an honorary member. I saw a good deal of him during the struggle over the original National Health Insurance Bill, which he cordially disliked. His instincts revolted against any interference with the freedom of any profession, for though he was an old civil servant and thus under the suspicion of favouring bureaucracy, he was a born individualist. On many later occasions I sought his help as a member of Parliament, and he was always ready to give it, even if it meant much trouble, for he took his duties as a university member very seriously. He will be a distinct loss to us and also to Parliament, for there are too few with his devotion to all that parliamentary institutions stand for. The service at St. Margaret's on March 19th, which I attended on behalf of our Council, was dignified and beautiful; representatives of Sir Henry's

family were surrounded by large numbers of members of Parliament and members of the public services, the universities, and the professions, all of which he had served with devotion and distinction. It was just, one felt, what he would have regarded as a fitting end to his work.

### C. DA FANO, M.D.,

Reader in Histology, University of London (King's College).

DR. C. DA FANO, F.L.S., Reader in Histology at King's College, London, died with unexpected suddenness at his residence in London on March 14th, in his forty-eighth year. By his death medical science in this country loses one of the ablest exponents of histology.

Corrado Da Fano was the third son of Commendatore Alessandro Da Fano. He received his early training in histology in Golgi's institute of histology and general pathology at the University of Pavia, where he graduated M.D. in 1905, and later (1912) became Libero Docente in morbid anatomy. He obtained a travelling fellowship at Milan and worked in Ziehen's neurological clinic in the University of Berlin in 1908, and in the following year with Dr. Bashford at the Imperial Cancer Research Fund, London. After a period of work at Groningen he returned to Milan University as vice-director of the pathological institute. From 1915 to 1918 he served as captain in the Italian Army Medical Service on the Italian front. In 1918 he became lecturer in histology at King's College, London, and in 1922 was given the title of reader in histology in the University. Dr. Da Fano specialized in the histology of the central nervous system, and his advanced lectures attracted large audiences; the histological specimens by which they were illustrated formed a complete and noteworthy collection. His researches, published in a series of about sixty papers in various journals, were mainly concerned with the Golgi apparatus in cells and the special lesions of the nervous system in such affections as encephalitis lethargica. He had a very extensive knowledge of foreign languages, and he generously devoted a considerable portion of his time to acting as one of the editors of *Physiological Abstracts*. He married in 1915 Miss Dorothea Landau, and leaves a son and a daughter.

## Universities and Colleges.

### ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION TO THE COUNCIL.

MONDAY, March 21st, was the last day on which the names of candidates were to be received for the election of members of the Council which takes place on July 7th. Nine nominations have been forwarded to the Secretary by candidates seeking to fill the three vacancies occasioned by the retirement in rotation of Sir John Bland-Sutton, Bt., Sir Cuthbert Wallace (Vice-President), and Mr. W. Thelwall Thomas.

The candidates are: Sir Cuthbert Wallace, K.C.M.G., C.B. (St. Thomas's), Fellow 1893, Member 1891; Mr. W. Thelwall Thomas, M.B.E. (Liverpool), Fellow 1890, Member 1886; Mr. L. P. Gamgee (Birmingham), Fellow 1893, Member 1891; Mr. Herbert J. Paterson, C.B.E. (London Temperance Hospital), Fellow 1897, Member 1892; Mr. H. W. Carson (Prince of Wales's), Fellow 1899, Member 1895; Mr. J. P. Lockhart-Mummery (St. Mark's), Fellow 1900, Member 1899; Mr. Hugh Lett, C.B.E. (London), Fellow 1902, Member 1901; Sir Crisp English, K.C.M.G. (St. George's), Fellow 1903, Member 1900; Mr. C. C. Choyce, C.M.G., C.B.E. (University College Hospital), Fellow 1905, Member 1905.

The constitution of the Council since July, 1926, has been as follows:

*President.*—Sir Berkeley Moynihan, Bt., K.C.M.G., C.B., Council (1) 1912 (substitute), (2) 1919, Pres. 1926.

*Vice-Presidents.*—Sir Cuthbert S. Wallace, K.C.M.G., C.B., C. 1919; Mr. F. J. Steward, C. 1920.

*Other Members of Council.*—Sir Anthony A. Bowlby, Bt., K.C.B., K.C.M.G., K.C.V.O., C. (1) 1904, (2) 1912, (3) 1920, Pres. 1920, 1921, 1922; Sir John Bland-Sutton, Bt., C. (1) 1910, (2) 1918, Pres. 1923, 1924, 1925; Sir D'Arcy Power, K.B.E., C. (1) 1912, (2) 1920; Sir H. J. Waring, C. (1) 1913, (2) 1921; Sir John Lynn-Thomas, K.B.E., C.B., C.M.G., C. (1) 1918 (substitute), (2) 1925; Mr. Ernest W. Hey Groves, C. (1) 1918, (2), 1926; Mr. W. Thelwall Thomas, M.B.E., C. 1921; Mr. C. H. Fagge, C. 1921; Mr. R. P. Rowlands, O.B.E., C. 1922; Sir James Berry C. 1923; Mr. J. Herbert Fisher, C. 1923; Mr. W. Sampson Handley, C. 1923; Mr. Percy Sargent, C.M.G., D.S.O., C. 1923; Mr. G. E. Gask, C.M.G., D.S.O., C. 1923; Mr. W. McAdam Eccles, C. (1) 1914, (2) 1924; Mr. Wilfred Trotter, C. 1924; Sir Charles Gordon-Watson, K.B.E., C.M.G., C. 1924; Mr. A. H. Burgess, C. 1925; Mr. V. Warren Low, C.B., C. (1) 1916 (substitute), (2) 1917, (3) 1926 (substitute); Mr. Victor Bonney, C. 1926 (substitute); Mr. G. Grey Turner, C. 1926.

The medical schools are represented as follows:

| | |
|---|---|
| *London*: | |
| St. Bartholomew's | 6 |
| Guy's | 3 |
| St. Mary's | 1 |
| *Middlesex | 3 |
| St. Thomas's | 3 |
| University College | 1 |
| Royal Free | 1 |
| Total London | 18 |
| *Provincial*: | |
| Bristol | 1 |
| Cardiff | 1 |
| Leeds | 1 |
| Liverpool | 1 |
| Manchester | 1 |
| Newcastle-on-Tyne | 1 |
| Total Provincial | 6 |
| Total Council | 24 |

* One member retires and does not seek re-election.

### UNIVERSITY OF OXFORD.

*Proposed Research Fellowship in Medical Science.*

A BEQUEST to the University was made by the late Gustave Isidore Schorstein, D.M., Christ Church, F.R.C.P., physician to the London Hospital and the Brompton Hospital for Diseases of the Chest, who died in 1906. The bequest was subject to two life interests, and these having matured by the termination of both life interests, a Decree has been promulgated in the University proposing to establish a research fellowship, to be called the Schorstein Research Fellowship in Medical Science. If the Decree, which was promulgated on March 15th, meets with the approval of congregation next month, it is probable that an election will be made during the Summer Term. The conditions under which it is proposed that the Fellowship shall be awarded have been published in the *Oxford University Gazette* of March 16th, 1927.

### UNIVERSITY OF DURHAM.

AT the June convocation the honorary degree of D.C.L. will be conferred upon Sir James Berry, F.R.C.S., President of the Royal Society of Medicine and consulting surgeon to the Royal Free Hospital.

### VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examinations indicated:

DIPLOMA IN PUBLIC HEALTH.—N. S. Craig, T. N. Fisher.
DIPLOMA IN PSYCHOLOGICAL MEDICINE (*Part I*).—Mary C. Luff.

### UNIVERSITY OF ABERDEEN.

THE following candidates have been approved at the examination indicated:

FINAL M.B., CH.B.—G. J. Allan, A. W. Badenoch, J. Barclay, Catherine I. A. Craig, J. G. H. Davidson, R. G. Dingwall, P. T. J. Doss, A. D. Duff, G. A. P. Fraser, J. M. C. Gill, J. Leiper, J. W. Lobban, *N. J. Logie, *H. G. M'Pherson, C. P. Mann, G. N. Marr, *W. Marshall, J. R. Moir, J. H. Otly, *A. S. Paterson, Mary Riddoch, C. C. Ross, G. C. Walker, L. G. Walters.

* With distinction.

### UNIVERSITY OF ST. ANDREWS.

THE University Court at its last meeting accepted with gratitude the gift of £100,000 to the University from an anonymous benefactor. Of this munificent donation £40,000 will be used for establishing a number of entrance scholarships of £100 a year each, confined to men students living in an official residence at St. Andrews; £29,000 will go towards the cost of the new hall of residence for men students; £8,000 will be used in improving the University chapel; and the balance, £23,000, remains at the disposal of the University Court.

### UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

At the spring commencements in Hilary Term, held on March 19th, the following degrees in the Faculty of Medicine were conferred:

M.D.—R. E. Steen.
M.B., B.Ch., B.A.O.—M. G. J. Booysen, G. D. Edwards, E. A. Ellis, S. Gurevich, W. F. Knobel, M. Sherrard (*antea* Sherowitz), G. S. Smyth, G. O. Taylor, R. C. U. Warrington.

### UNIVERSITY COLLEGE OF SOUTH WALES.

MR. CECIL MCLAREN WEST, *M.C.*, M.B., B.Ch., D.Sc., has been appointed professor of anatomy in the College, in succession to Professor D. Hepburn, who retires from the beginning of October.

# Medico-Legal.

## HUME-SPRY *v.* SMITH AND WATSON.

JURY STOP CASE: VERDICT FOR DEFENDANTS.

ON the fifteenth day of the hearing the special jury stopped the action in which Mr. F. Hume-Spry, now an official in the Probate Registry, claimed damages in the King's Bench Division from Dr. R. Percy Smith and Dr. A. H. Watson for their alleged negligence in certifying him as insane. Mr. Justice McCardie accordingly entered judgement for the defendant doctors with costs, the jury being exempted from further service for five years.

The previous proceedings in the case are reported in the issues of the BRITISH MEDICAL JOURNAL of March 12th (p. 495) and 19th (p. 547).

*Evidence for Defence Continued.*

Mrs. Hume-Spry, wife of the plaintiff, continuing her evidence in chief, said she was compelled by her husband to write unkind, or objectionable, letters to her mother-in-law. In 1921 her husband asked her to approach Dr. Woods to ask him to write to his mother about making provision for him. She did so, and Dr. Woods called to see her at her flat—"he told me that he was passing, having been to a nursing home, and that as he had not made any appointment he had thought that he would drop in and see what he could so. He said that he was in a great hurry, and he asked me if I had had any dinner. I said that I had not, and so we went to dinner at Pagani's Restaurant." She also dined with Dr. Woods at the Café Royal in January or February, 1921. Her husband suggested at the time that she should bring Dr. Woods into the flat and be discovered with him in a compromising position, but she told him he was mad and that she would have nothing to do with it. She thought it kinder to think him mad than a blackmailer—he had a sort of moral cancer. She never told her husband that Dr. Woods was in love with her and that she reciprocated it. While her husband was at Dolgelly she received a letter from him containing the words: "Don't waste your time being friendly with Woods. Get him compromised. . . . I suggest getting him to take you away for the week-end." She wrote in reply: "Cannot you realize that decent men do not sell their wives for cash?" He then wrote that he was coming to London to show her and Dr. Woods up, as no judge would believe Dr. Woods visited her flat merely to talk business. She telephoned to Dr. Woods that she wanted to see him but that she did not want to go to the hospital. They therefore met at Pagani's Restaurant, where she showed him her husband's letter, saying her husband had done the same sort of thing in 1918. The witness described the scene at Paddington Station and at her flat on her husband's return from Dolgelly. He found the letters he had written from Dolgelly and destroyed them. In March, 1921, when she and her mother were living in Marylebone, her husband came in late one night shouting: "Where is that man?" but the next morning he begged them not to tell the doctors. She never wrote a confession of misconduct with Dr. Woods. She had always opposed her husband's certification. There was no truth in the suggestion that she had misconducted herself with Dr. Stodart-Walker of the Ministry of Pensions. The witness then described the night of December 31st, 1922, when she woke up and found her husband had turned on the gas. Later, she told Dr. Prideaux and Dr. Forward, of the Ministry of Pensions, about this incident. On March 12th, 1923, her husband came to her flat at 11 p.m. and charged her with conspiring to get him certified. The conversation went on to 3 a.m. Then her husband put a carving knife to his throat, and she knocked it away, exclaiming, "If you do one more mad act I will have you certified." Later, the same night, she found her husband on one knee with the same knife to his own throat. The following day she informed Dr. Oliver (the medical superintendent at Latchmere) what had occurred, and she went to Latchmere and saw Dr. Percy Smith, one of the defendants, about her husband's condition. The day after that Dr. Oliver said her husband had not returned to the hospital, and asked her to sign an application for an urgency order. She did so, and later her husband called at her flat "oozing venom." She denied telling him that she had "got him in the hollow of her hand." When he left the flat she telephoned to Dr. Oliver and told him what had taken place. On March 17th she went to the Old Manor House, Salisbury, and saw Dr. Watson, the other defendant, and then signed the petition for the reception order.

Mr. Justice McCardie: It has been suggested that you were a party to a scheme to get your husband certified. Is there the slightest truth in that?—There was no conspiracy, or scheme, or plot. If I schemed at all I schemed to keep him out of the asylum.

Cross-examined, Mrs. Hume-Spry said there were worse things to be said about her husband than had already been said. He was a sexual pervert. He was always urging her to earn money for associating with men. His attitude was always that of an accommodating husband.

Sir Henry Maddocks: If he had been scheming for your downfall, it is very strange that the delusion that you had committed misconduct with Dr. Woods drove him mad?—Yes, if he had not been mad before. My sin was one of omission to get Dr. Woods compromised. If I had done that you wouldn't have had this case at all.

Continuing her evidence under cross-examination, Mrs. Hume-Spry said that when she and her husband were "hard up" in 1918 a young officer called upon her who said he had been asked by another man to visit the flat. Whilst he was there her husband appeared and asked the lieutenant "What the hell are you doing here with my wife?" The boy replied that her husband was the man who gave him her address as "a woman whom he might visit." Her husband admitted that night that what he had done was the act of a foul maniac. After her husband came out of the Old Manor House he told all her tradesmen at Westminster that she had been seduced by the whole of the Ministry of Pensions and half Harley Street. The witness added that everything that was foul and dishonourable appealed to her husband. In 1917 and 1918 it was quite clear that her husband wished her to make money by immorality.

Answering Mr. Justice McCardie, Mrs. Hume-Spry said she met Mr. Chetham-Strode, a barrister, when she was travelling to Belgium with her uncle, since dead, and there was not the slightest foundation for the insinuation that she had misconducted herself with Mr. Chetham-Strode.

Mr. Justice McCardie pointed out to Sir Henry Maddocks, counsel for the plaintiff, that he had said he had materials from which he could make reasonably definite charges against Dr. Woods, Mr. Chetham-Strode, and Dr. Stodart-Walker.

Sir Henry Maddocks: I say that I shall prove sufficient facts to show that the ordinary person would draw an inference that adultery had been committed. If I misled your lordship into thinking that I should prove actual adultery I never intended to do so. I meant that I should put before the jury such a state of circumstances that Mr. Hume-Spry had no delusion at all, but that he was entitled to draw the inference that adultery had been committed. Whether he was right or wrong is another matter.

Mrs. Hume-Spry, cross-examined on the contents of letters she received from Dr. Stodart-Walker, described them as "flippant rubbish." Her husband knew of the letters as they arrived; she kept them because there was nothing to hide. Witness said it was pure invention on the part of her husband that in 1922 she signed a confession of adultery with Dr. Woods. The confession her husband forced her to sign in 1918 was still with Mr. Francis, the solicitor.

On the instruction of the judge, Mr. Francis was sent for and, re-entering the witness-box, he produced the confession signed by Mrs. Hume-Spry in 1918. He explained that he had forgotten this confession when he gave his evidence. His recollection was that the plaintiff's solicitors asked him to produce a confession relating to Dr. Woods in 1922 which he did not remember having seen.

Continuing her evidence, Mrs. Hume-Spry described her interview with Dr. Percy Smith, one of the defendants. Dr. Smith put it to her quite straightly whether there had been any misconduct, and she replied that there had not been. He did not ask her whether she had ever given her husband cause for jealousy with any other man. At a later stage the witness said she saw her husband at the asylum on May 10th, 1923, and he begged her very hard to take him out. She saw no sign of his being cured: he was the same old Hume-Spry. She saw him again on September 5th, 1923, and was much impressed with the improvement in him. He thanked her for having had him certified because the shock of certification had made him realize the nature of his previous actions. In the course of answers to further questions by Sir Henry Maddocks, Mrs. Hume-Spry said she did not regard her husband's delusion about herself as proof of his insanity; it was the mildest part of it. At times he was dangerous, not only to himself, but to her and to the community generally. Asked if she considered him cured now, she said she would not go so far as to say that; she thought he was merely improved.

Mrs. Amelia Johnson, mother of the last witness, gave evidence of the bedroom incident—the alleged turning on of the gas by the plaintiff and the threats to his own and to his wife's lives with a carving knife. The plaintiff's temper, she said, was at times uncontrollable and he used filthy language. In the course of cross-examination she agreed that before strangers her son-in-law was always good-tempered. After she came to know that he wanted to blackmail Dr. Woods she continued to live with her daughter and the plaintiff. Her daughter would not leave the plaintiff—she had old-fashioned ideas about the duties of marriage.

Dr. James Cowan Woods, who was medical officer in charge of the special hospital for officers at Palace Green, Kensington, until it was closed in 1921, said that on the plaintiff's admission in 1920 he showed signs of general mental failure. Throughout the time the plaintiff was in the hospital he was a border-line case. The witness dined with Mrs. Hume-Spry at Pagani's Restaurant and at the Café Royal solely for the purpose of helping the plaintiff. Mrs. Hume-Spry showed him a letter from her husband from Dolgelly urging her to "get Woods compromised."

Mr. Neilson: Did you tell Mrs. Hume-Spry at any time that you were in love with her?—It is ridiculous.

Did she ever say that she reciprocated that feeling?—It is completely untrue.

The witness added that no patient was surreptitiously drugged at the hospital. He had no knowledge of the plaintiff's movements after 1921, except in March, 1923, when he was told that, in the opinion of the authorities at Latchmere Hospital, Ham Common, the plaintiff was dangerous to him. Later, the witness was told that the plaintiff had been certified. Asked by Mr. Neilson if people of unsound mind had delusions like this about sexual matters, Dr. Woods replied that they were the commonplaces of mental institutions.

Sir Henry Maddocks (cross-examining): Supposing a neurasthenic patient knew that a doctor had taken his wife out to dinner on three occasions, and had taken her back to the flat where she was living alone, do you think that he would be mad because he was jealous?—I cannot give you any answer to that.

That is what happened, is it not?—No; I met Mrs. Hume-Spry with her husband's full knowledge to discuss something at his repeated request.

On all the occasions on which we dined I was doing him a favour by devoting my time after my hospital work to communicating with his people with the object of getting him a better regard from his mother.

Is it not a delusion of neurasthenic patients that the doctors are paying attention to their wives?—Not in any degree.

Did you communicate with the Ministry of Pensions and tell them that one of your patients was accusing you of immorality with his wife, and that you would rather not keep him?—Within a few days he gave me a written apology. The whole thing was absolutely crazy.

Mr. E. D. Chetham-Strode, a barrister, in evidence, denied that any misconduct had taken place between him and the plaintiff's wife, and his lordship said the honour of the witness had been completely vindicated.

Dr. A. Stodart-Walker, in evidence, said he was assistant director of treatment and training at the Ministry of Pensions in 1922. He denied misconduct with the plaintiff's wife. "Mrs. Hume-Spry," he said, "is a woman whom it does not take long to know, and in a very little time we were in the midst of good-humoured laughter." The suggestion that there had been immoral relations was simply monstrous. In reply to Mr. Justice McCardie, who asked if there was the slightest ground for suggesting that he caused Mr. Hume-Spry's certification, the witness said he had nothing to do with it; he did not even know that the plaintiff had been certified. The head of Rotherfield Court, an officers' training centre near Henley, recommended that he should see Mrs. Hume-Spry. Her husband's welfare was a passion with her, and he was able to advise her whom to see at the Ministry of Pensions.

At the suggestion of the jury, the defence agreed to call Dr. Prideaux, Dr. Oliver, and Dr. Martin as their next witnesses.

Dr. J. F. E. Prideaux, Deputy Commissioner of Medical Services at the Ministry of Pensions, in his evidence, said that on December 11th, 1922, he saw the plaintiff at Rotherfield Court. His whole appearance—distracted, excitable, and agitated—was that of a very unstable person. From the reports the witness saw, and from observation, he concluded that it was unsuitable that the plaintiff should remain at Rotherfield Court, so he recommended his transference to Latchmere Hospital, which was then a "border-line" hospital. He was then of opinion that certification would probably have to take place later. On January 15th, 1923, the plaintiff called at the Ministry of Pensions and asked to be allowed to remain at Rotherfield Court. The witness then told him that he could not alter his decision, and the plaintiff was much upset. Mrs. Hume-Spry saw him (the witness) about the same time, and told him of the incident when her husband tried to poison her by turning on the gas in their bedroom. She was not in the least vindictive against her husband; on the contrary, she said that she did not want him certified. The story about the gas incident was consistent with Mr. Hume-Spry's condition at that time. The witness said he formed his opinion of the plaintiff's condition both on December 11th, 1922, and January 15th, 1923, quite irrespective of any accusations against Dr. Woods and the plaintiff's wife. At that time he knew nothing about the plaintiff's charges. While at Latchmere the plaintiff called several times on the witness at the Ministry, and told him that while at Palace Green Hospital Dr. Woods had drugged him so that he could go out with Mrs. Hume-Spry. The next time the plaintiff called he was almost in a state of mania. He burst into the office with his eyes bulging and was wildly excited, accusing the witness of being a friend of Dr. Woods and in league with him. The plaintiff also said he was going to thrash Dr. Woods, and then broke off the interview very abruptly and dashed out of the room. At the next interview the plaintiff was quiet and suspicious, and said that all the officers of the Ministry of Pensions were conspiring against him. At the last interview he was quiet, but said he would not remain at Latchmere, and that he would shoot Dr. Woods. The witness then came to the conclusion that he was definitely certifiable, whether his statements against Dr. Woods were true or not. He then telephoned to Dr. Woods and warned him, and also telephoned to Dr. Oliver at Latchmere Hospital, and Dr. Oliver agreed with the view he expressed. In April, 1923, the witness saw the plaintiff at the Old Manor House, Salisbury, and he thought that he had improved and might be on the way to recovery. He thought that Mrs. Hume-Spry was doing everything she could for her husband.

Dr. Prideaux, in the course of his cross-examination, was asked whether in January, 1923, he considered that the plaintiff ought to be certified in the public interest, and replied that he was not then prepared to make up his mind definitely. He agreed that if, in January, 1923, Mrs. Hume-Spry told her husband that the doctors at the Ministry of Pensions wanted to have him certified, that might have a tendency to disturb him, and if he were suffering from nerves that might tend to make him worse.

Dr. N. H. Oliver, a member of the Bar, and medical officer in charge of the officers' special hospital under the Ministry of Pensions at Latchmere, in his evidence said that within a few days of the plaintiff's admission to Latchmere he came to the conclusion that he was certifiably insane. The witness did not care about having him in his hospital, because he was very excitable and very suspicious, and had conceived a belief that there was a great plot against him by everybody in the Ministry of Pensions. The plaintiff even thought that the witness, as a doctor attached to the Ministry, was also concerned in it. The plaintiff asked him if he knew Dr. Woods, and when the witness replied that he did, the plaintiff said, "I thought you would." Later the witness heard reports that the plaintiff was threatening the other patients and the orderlies, and that the other patients objected to having him in the hospital. The day before he was certified the plaintiff went to London and stayed out all night without leave. On the following day the witness asked him what he had been doing, and he replied that he had spent a couple of hours on the previous night outside Dr. Woods's house. The witness asked, "What would you have done if you had seen him?" and the plaintiff replied, "I should have killed him. I intend to kill him." After that the witness had to take some step. At the witness's request Mrs. Hume-Spry came to the hospital, and he told her that her husband was too bad for his hospital. She did not wish him to be certified, and asked whether certification could not be postponed or avoided. The witness at that time formed the conclusion that if Mr. Hume-Spry was not dangerous then he would soon become so. He chose Dr. Percy Smith, the defendant, to see the plaintiff because of his eminence in the profession and of his independence of the Ministry, against whose doctors the plaintiff had made all sorts of charges. The witness took the steps for certification for the plaintiff's own benefit, as the witness thought he could not possibly get well in the circumstances in which he was. Compulsory discipline was the only thing for him. The day after Dr. Smith saw him (March 14th, 1923) the plaintiff left the hospital before breakfast, having told several people he did not intend to return. The witness looked upon him as being definitely and dangerously homicidal, and telephoned to Dr. Smith for an urgency order as soon as possible. It was a very anxious time.

Cross-examined, the witness said that what the plaintiff had said about his waiting outside Dr. Woods's house and intending to kill him impressed the witness more than anything else as to the urgency of certification. Mrs. Hume-Spry was opposed to certification, but at length she said to the witness: "If all you doctors think the same I am afraid that I shall have to give way." Asked by Sir Henry Maddocks what he would have certified the plaintiff for before March 13th, the witness answered: "Because he was likely to be dangerous to others." He added that the plaintiff suffered from insanity of a delusional type. He believed that the whole Ministry of Pensions was in league against him. His reason was so distorted and warped that he was not always rational, and refused to be treated in any way, breaking all the rules of the hospital.

Mr. Justice McCardie: Do you think that Dr. Smith was right in certifying Mr. Hume-Spry on March 13th?—I think that he was absolutely right. I do not think that he could do anything else.

You yourself would have certified him on that date without hesitation?—Without hesitation.

Dr. S. E. Martin, the medical superintendent of the Old Manor House, Salisbury, said he received Mr. Hume-Spry into that asylum on March 15th, 1923. Two days later he saw Dr. Watson, the defendant, and told him that, in his view, Mr. Hume-Spry was a dangerous and possibly suicidal case. In his opinion it was quite proper to certify him, and he was not influenced by anyone in forming that conclusion.

Mr. Neilson: Did you ever tell Mr. Hume-Spry that if he did not write to Dr. Woods he would never get out of the asylum so long as he lived?—No.

It has been suggested that, thinking one thing, you expressed another because of your wife and child. Is there any truth in that?—No.

The witness added that Mr. Hume-Spry was kept in an observation ward, and the suggestion that he was put in a refractory ward was absolutely false. To say he was kept among raving lunatics was absolutely untrue. At one time the plaintiff maintained that his suspicions about Dr. Woods were without foundation. Mrs. Hume-Spry's attitude towards her husband was always very solicitous for his recovery. No pressure was ever brought to bear on the witness from any quarter to keep the plaintiff in the asylum, or to refuse him leave on parole. On August 28th the plaintiff wrote to the witness expressing appreciation of "your treatment of my case," and said that the Old Manor House had given him a perspective and enabled him to feel a much stronger man. On December 11th Mr. Hume-Spry was allowed on parole for a month to visit his sister. Although his condition was improved, he was not then fit to be discharged from institutional care. He did not return after the leave expired.

Cross-examined, Dr. Martin said the plaintiff was so manifestly insane when he was received by him that it would not have altered his opinion if he had known that the plaintiff had had grounds for believing his wife had misconducted herself with Dr. Woods.

As the witness was answering this question, the jury handed a note to Mr. Justice McCardie, who sent it to Sir Henry Maddocks.

Sir Henry Maddocks (after reading its contents): It is quite sufficient intimation for me. The jury for a long time have given careful attention to this matter. It has been gone into in great detail.

Mr. Justice McCardie: The jury say: "We are all of opinion that there must be a verdict for the defendants." I gather that after that you feel that it would be useless to proceed with the case.

Sir Henry Maddocks: I think that it would be wrong. The issue is one of fact for the jury. They have heard the evidence in great detail and they have acted on it. I have nothing to complain about.

*Verdict for Defendants.*

The jury then formally returned a verdict for the defendant doctors.

Mr. Neilson referred to the aspersions cast upon Mr. Chetham-Strode, Dr. Woods, Dr. Stodart-Walker, and Dr. Martin, and expressed the hope that it would be possible for his lordship and the jury to say that the characters of all these witnesses had been completely vindicated; also that, in view of what the last three witnesses who were called had said about Mrs. Hume-Spry's solicitude for her husband's welfare, she would be relieved of the baseless charges which had been made against her.

Mr. Justice McCardie said it was clear that the verdict of the jury had fully vindicated both the defendants from the charges of negligence and bad faith which were made against them. It was conceded by Sir Henry Maddocks that the honour of Mr. Chetham-Strode had been completely vindicated. It followed from the verdict of the jury that the honour of Dr. Woods had been completely vindicated. He also inferred that the honour of Dr.

Stodart-Walker had been vindicated, although his lordship had no doubt that the jury would like to express their regret at the careless and foolish letters he wrote. He must infer from the verdict of the jury—and he should hold it himself without the slightest hesitation—that there was not the faintest ground for the suggestion that there was a conspiracy by the officials and doctors of the Ministry of Pensions wrongfully to send the plaintiff to the asylum.

His lordship added: "I shall retain the documents in the custody of the court that the Director of Public Prosecutions may consider whether or not he shall take criminal proceedings against Mr. Hume-Spry for perjury, or such other offence as he may think fit."

# Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

BUSINESS in the House of Commons this week has included the second reading of the Cinematograph Films Bill, further discussion of the Navy Estimates, the second reading of the Consolidated Fund Bill, and certain Scottish business. In debating a London, Midland, and Scottish Railway Bill a number of members referred to the daily overcrowding of trains in East London and South Essex. The House of Lords has discussed the possibility of greater economy in national expenditure.

On March 22nd Dr. Fremantle presided over a meeting of the Conservative Health and Housing Committee, which discussed the Nursing Homes Bill, introduced by Mrs. Philipson. This bill is down for second reading on April 1st, as second order of the day. Its text was not available for the Committee, but it is expected to incorporate the recommendations of last session's Select Committee on Nursing Homes. The Health and Housing Committee was of opinion that the bill should be drafted so as to meet general approval and ease its passage into law this session, which is to be a short one. Emphasis on rigorous inspection of all nursing homes would probably be deprecated by those who wish to see the bill pass, but the need for registration of these homes is accepted.

A Mental Deficiency (No. 2) Bill has been introduced by Mr. Rhys Davies. It represents the Labour party policy on the question, and incidentally proposes to reconstitute the Board of Control.

## The Mental Deficiency Bill.

*Second Reading Carried.*

In the House of Commons, on March 18th, Mr. Crompton Wood moved the second reading of the Mental Deficiency Bill. He said a mental disease which in its nature could be cured was dealt with in the Lunacy Acts, while the Mental Deficiency Act of 1913 dealt with those considered to suffer from arrested and incomplete mental development, and who, while likely to recover, required care, supervision, and control. The 1913 Act, though one of the most valuable social Acts ever passed, had the defect that only those mentally deficient "from birth" or "an early age" came within its scope. Those words, as generally defined by magistrates and medical practitioners, excluded several classes from the benefits of the Act. Encephalitis lethargica, and meningitis, and frequent epileptic fits might affect a person all through life, but unless these began at an early age the sufferers, though often rendered mentally deficient, could not come within the benefits of the Act. Another class suffered accidents causing damage to the brain. Cases in which the early history was lost were frequent. An instance had come before the Board of Control where a man, aged 36, was convicted forty times between 21 and 34 years of age, twenty times for indecent assaults. He had been imprisoned in all for five years between those ages. The cost in prosecution and imprisonment had been £1,000. No female was safe while he was at large, but his history before the age of 14 was unknown, and the magistrates could not make an order for his detention, as they held that the defect could not be proved from an early age. A bill introduced last session had been crowded out. The present bill had been so drawn up as to obviate any charge of interfering with the liberty of the subject; in its preparation the advice had been obtained of experts at the Ministry of Health and of the Board of Control, and with the assistance of the Association of Mental Welfare. The bill proposed the deletion from the Act of the words "from birth" and "from an early age," as recommended in the report of the Departmental Committee on Sexual Offences against Young Persons. A subsection defining mental deficiency, which was not in the Act, had been introduced. The bill of last session limited the period within which mental deficiency must appear to the ages of mental development, but in the present bill the age limit was put at 18 years. Many people wished the limit to be higher, but that age had been chosen to avoid opposition. From last year's provision that mental deficiency must be "induced after birth by disease, injury, or other cause," the words "or other cause" had been dropped. The original Act provided that a defective might be placed in an institution or under guardianship if "found neglected, abandoned, or without visible means of support, or cruelly treated." The bill provided that the good mother could apply to the magistrates for her defective child to be certified. It also provided that children incapable of receiving benefit in special schools or likely to be detrimental to others could be placed under supervision or sent to an institution. The bill would give education authorities power to recommend for supervision children who had been in special schools, in addition to their present power of certifying for guardianship or for committal to an institution. Mr. Wood remarked that he looked to supervision of mental defectives in their own homes as one of the great hopes of dealing with this problem. Of mentally deficient girls who had been allowed to go to their own homes under supervision of the London County Council during the first ten years of the Mental Deficiency Act, only 10 per cent. had children. Another clause in the new bill enabled a continuation order for a mental defective to be made by a doctor at the place where the boy was working. The boy would not be recertified by one medical practitioner alone. The case had to be investigated by three magistrates, with one or more women, and a medical practitioner added. A further clause made it the duty of local authorities to provide training and occupation for defectives who were at their own homes under supervision. Mr. Wood told the House how, at a recent visit to the Epsom Manor Institution for Mental Defectives, he had found a large number of young persons all working busily at trades. Their ages ranged from about 8 up to 25. In an adjoining mental hospital he found young sufferers from encephalitis lethargica among elderly people with no great provision made for their training. The children would benefit greatly by transfer to the special institution, and the bill was directed to empower such a transfer.

Sir Douglas Newton, in seconding, said that even under the extended provisions of the bill some mental defectives would not be covered. The medical profession had shown courage in the administration of the Act of 1913, but was not adequately covered by the present law. In 1925 there were 55,480 mental defectives in the country, or 1.46 per 1,000 of the population. Ascertainment tended to increase the figures. The argument that sterilization would prove a cheap alternative to segregation he did not think a sound one. Little expense would be saved to the community, and mental deficients nearly always led useless or harmful lives. Sterilization, if resorted to, would only result in 3 to 5 per cent. of those now in institutions receiving greater freedom. He urged that all cases of mental deficiency should be notified by local authorities before these cases reached the procreative age.

Colonel Wedgwood moved the rejection of the bill, and protested against the "detestable coercion" of taking into homes those defectives whose parents did not wish them to go. He referred to the case of a London labourer who had frequently been sent to prison for cutting off tresses of hair from girls on omnibuses. Under the bill that man, who ought to have visited a doctor, would receive a "life sentence" in an institution for mental defectives, though he would not be sent to one, because at present there was not adequate accommodation. He denied that statistics proved that persons called morally defective were sure to have mentally or morally defective children. The danger was that this bill would be used to prevent girls being on the streets. He would wager that most of the younger persons up to 25 who were in the homes for the mentally defective were women.

Mr. Crompton Wood intervened to say that most of them were boys.

Colonel Wedgwood said it was better to have an illegitimate birth rate which was diminishing than to hold over girls on the border-line of vice and immorality the fate of being enclosed in one of these institutions for life. He declared that the definitions in the bill were not of much importance; the expert would have his own way with the Act of Parliament, and would lock or unlock the door of the institution. He warned the House against building up a new worship of expert authority.

Mr. Rhys Davies said there were young persons in prison who should not be there, but were cases for sympathetic medical treatment. The same thing was true in the Borstal institutions. Greater powers should be given to the Ministry of Health to see that local authorities performed their duties under the Mental Deficiency Act. There was no place in the country where an adult suffering from "sleepy sickness" could be sent.

Mr. Chamberlain said he had received many letters from mental deficiency committees and organizations interested in mental welfare, all regretting that last year's bill had been dropped and urging its reintroduction in the same or a slightly modified form. He inclined to think that the definition of mental deficiency in the bill before the House was too narrow

and the limiting age of 18 too low. Defective children were happy in their institutions, and were treated with unvarying kindness, but were not suitable companions for non-defective children. The shortage of accommodation for these cases could be temporarily alleviated if other institutions now administered by boards of guardians could be handed over to the councils of counties or county boroughs. Meanwhile, let all be certified who ought to be. He did not think it necessary to provide special institutions for adult cases of encephalitis lethargica. He did not think the bill would require to be much amended, and hoped it would be carried.

Mr. Snell, as a member of the Royal Commission on Lunacy, thought that certification for mental deficiency should be the last resort. The first thing to do was to make sure that attention had been given to the physical health of the young person. Whatever good there might be in medical treatment for the mentally afflicted should be available for the adolescent. He was not satisfied that the bill sufficiently discriminated between temporary and permanent affliction. The House ought to have a healthy distrust of "medical omniscients." He declared that life in institutions for the mentally defective could not be happy. Mr. Charleton suggested that members and medical men did not understand the view of the working class woman on separation from her child. He had visited a number of mental hospitals and homes, and had noticed that in some cases the children cringed to the attendants. Attendants were far more eager to prevent the appearance of bruises on their patients than to treat them kindly. To a mother these institutions were asylums. His own boy had been mentally deficient from the age of 2, and had been kept at home. Though he (Mr. Charleton) had only been a fireman on the railway, all difficulties had been overcome by a mother's love.

Colonel James said that if Mr. Charleton had any charges to make against mental homes he should bring them definitely. To make insinuations in the House was most unjust. Many cases of mental deficiency were unwanted children, and at their homes got a cuff on the head rather than a mother's love. Many border-line cases suddenly "went off the deep end," and for them this bill was necessary. He hoped the bill would not be obstructed in Committee.

Mr. Smithers said one of the things of which they could be proudest in this country was the high standard of the medical profession. In the case of death or accident, or in the coroner's court, everyone seemed to accept the doctor's decision. Mr. March, in supporting the bill, paid a tribute to the way the London County Council had graded children in the various schools. He understood that there were 40,000 to 50,000 mentally defective children in the country, but only two or three schools for them. The local authorities should set about building institutions.

Sir George Hume gave details of what the London County Council was doing for the mentally defective, and said the Council was considering the provision of further accommodation, chiefly for criminal, intractable, and very immoral women. The bill introduced no new principle.

Major Crawfurd asked medical members of the House whether the ordinary medical practitioner was in fact duly qualified to give an opinion on cases of mental deficiency. Commander Williams thought that before passing the bill the House should be certain that there were means of training a staff adequate for the new institutions which would have to be provided. These modern institutions would be very costly. They might easily get an increased cost of £20,000,000.

Mr. Hardie, who had experience of schools for the mentally defective in Scotland, said the medical men of whom he had experience were not bigoted. He had cases of children, in the ordinary way looked on as hopeless, who had benefited wonderfully in the special schools. A boy who could not speak and could not add two and two was now a skilled designer in a carpet factory.

Dr. Vernon Davies said that no real opposition to the bill had been developed in the debate. Mental deficiency, or amentia, was absolutely distinct from dementia, and unfortunately cure could not be expected. Defectives could not be cured but might be improved. The bill did not mean that nearly all cases of mental deficiency must go to institutions. If they had to go, the liberty of the subject was efficiently guarded by the process which must be gone through. The whole idea of the Act of 1913 and of this amending bill was the benefit of the child. As to the cases of encephalitis in which arrested or incomplete development resulted, most people who were competent to judge agreed that these cases only occurred in adolescence, before the brain was completely developed. He protested that the medical men of the country were sometimes severely criticized from the Labour benches. Their knowledge was superior to that of a layman, and attention should be paid to them. Whether they were believed or not, they were doing the best for the patients. Mentally deficient children did not feel confinement in an institution as a normal child did. They were all one happy family, and when allowed to go home for a week or a fortnight had, he found, been delighted to return to their school, their games, and their playmates. In reply to the inquiry whether the medical men who were called in were duly qualified to give opinions on cases of mental deficiency, Dr. Davies answered "Yes, certainly." The first examination was by two medical men who had been approved by the Board. The second, at the end of twelve months or whatever the period might be, was by a local medical man who was perfectly competent to decide whether the child should continue under control or go free.

Dr. Fremantle said medical men were the last to declare at any moment that they were right in any decision. They might be empirics, as Mr. Charleton said they were, but they had information a little deeper and wider than that of other people, and they had to decide upon experience. Very often the restrictions provided greater freedom for mental defectives than they would otherwise have. Often the individual wished to stay when the officers of the institution suggested that he could go home. Mr. Charleton had suggested an intermediate type of institution where a patient could be kept for five days of the week and allowed home at week-ends. That system already existed in a number of institutions. There were 55,000 mental defectives in the country, and accommodation for only 5,000 in institutions, but a large number of institutions under the guardians were being set free by measures like the Widows' and Orphans' Pensions Act. In the interests of the mentally defective, of their parents, of the public, and of the future generation he hoped the bill would pass into law.

Mr. R. Morrison said he had spent many years in teaching mentally deficient children, and had seen the wonderful results achieved in the special schools. There were nearly always in these mentally defective persons some senses more acute than those of ordinary people. Sir Herbert Nield said that when on the Middlesex bench he had had border-line cases before him who could not be certified under the existing law. The bill would ensure that such persons received proper care instead of ordinary punishment, which, with or without hard labour, would tend to aggravate their condition.

The bill was read a second time without a division, and sent to a Standing Committee.

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*Midwives and Maternity Homes (Scotland).*

The Midwives and Maternity Homes (Scotland) Bill was read a second time by the House of Commons on March 18th, without a division. In moving the second reading, Mr. Barclay Harvey said the bill was for the registration of midwives, to reduce the number of midwives who were not qualified, and for the registration and inspection of maternity homes. The infantile death rate was still high in Scotland. The efforts of certain local authorities had reduced it, but not the rate of maternal mortality, which was actually increasing in Scotland, being 6.2 per 1,000 births in the period 1915-22. A committee under Lord Salvesen had stated that the evidence it received was unanimous on the essential proposals of this bill. The births in Scotland were rather over 100,000 yearly, and 600 women died in maternity. The bill tightened up the provisions against the unregistered midwife, but made exception in cases in sparsely peopled districts or in emergencies which could not be foreseen. One clause entitled a midwife to be paid if she had been suspended from work owing to the possibility of her carrying infection through no fault of her own. The bill might be improved in committee.

Sir George Berry, in seconding, said the medical profession in Scotland entirely approved of the bill.

Mr. Maxton said the infant and maternal death rates in Scotland were disgraceful, and the heavy incidence was in the poor quarters of the big cities. In one ward of Glasgow the infantile death rate rose above 100 per 1,000 per annum; at the other end of the same city it was 32. City medical officers had proved that in the one- and two-roomed houses this death rate rose above the hundred, and in houses with five or more rooms it dropped to the twenties. The bill would have absolutely no effect. He did not see that the bill improved the inadequate arrangements made by the Act of 1915 for registration and training of midwives in Scotland. The Government had imposed the duty of doing this upon the Glasgow Maternity Hospital and similar institutions in Edinburgh, Aberdeen, and Dundee, but had made no allowance out of public funds.

Dr. Elliot said the bill was backed by members of all parties. All the points mentioned by Mr. Maxton could be threshed out in committee. The contributions from the child welfare centres of the Glasgow Maternity Hospital already amounted to £3,000 a year.

The bill, as already stated, was read a second time, and sent to a standing committee.

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*Tuberculosis.*—During 1926, twenty-six officers and men were invalided from the Royal Air Force on account of pulmonary tuberculosis. Sir Samuel Hoare states that the figures for the last five years show a steady decrease in the numbers invalided for this cause. The number of men invalided from the Royal Navy for pulmonary tuberculosis in 1925 was 209, and in 1926, 179. No reliable figures exist on which to estimate the number of cattle in Great Britain which are affected with tuberculosis.

*Boys in Mines.*—A bill to prohibit the employment of boys under 16 at night below ground in coal mines was read a first time on March 16th, on the motion of Mr. Tinker, who stated that more than 25,000 boys below 16 years of age are working underground. He added that many mine managers considered it morally and economically unsound to work boys on the night shifts. Boys were prohibited from working on the surface between 9 p.m. and 5 a.m., but this prohibition had not been extended to boys below ground.

*Opium in India.*—Earl Winterton, on March 21st, informed Mr. Gardner that the number of licensed opium shops in British India in 1925-26 was 5,844. The latest figure of poppy cultivation in British India showed 114,198 acres in the year ending October, 1925; in addition there was a small area of 1,653 acres in the Punjab Hills.

*Infant Welfare in Tropical Colonies.*—On March 21st Mr. Amery informed Mr. H. Williams that measures were being taken in most tropical colonies on the lines that had been successful in reducing infant mortality in this country. In many of these colonies the results compared not unfavourably with what had been accomplished here. Infant welfare clinics had been established and women doctors, nurses, and health visitors, with experience in this branch of medical work, were being appointed in increasing numbers.

*Gland Grafting.*—Mr. Guinness, in reply to Sir H. Brittain, on March 21st, said he was aware of Dr. Voronoff's work on gland grafting, and he had arranged, with Dr. Voronoff's concurrence, for a small commission of scientific men to examine and report upon the experimental work on sheep which had been carried out at the Government breeding station in Algeria. The visit of the Commission had been postponed until October or November, when the grafted sheep would be available for examination.

*Physical Condition of Recruits.*—In 1926 1,028 men presented themselves for recruitment into the Royal Air Force. Of them, 258 were rejected on medical grounds, the principal causes of rejection being dental defects, deformity of feet, heart disease, poor physique, respiratory diseases, defective vision, and ear diseases. For the Royal Navy in 1926 an average of 5,100 candidates presented themselves each month, and the average rejected was 4,460, not all on medical grounds. The main medical causes for rejection were defects of vision, teeth, and hearing.

*Poor Law Medical Relief.*—Answering Sir Charles Oman, on March 22nd, the Minister of Health said he was aware of the recommendation of the Royal Commission on Poor Laws to the effect that medical relief should be made more readily accessible and of the evidence of a witness, speaking on behalf of the British Medical Association, to the effect that if doctors attended without an order the rule was that they did not get paid. He was not aware that at the present time any difficulty had arisen. He would be glad to consider any information which Sir C. Oman might have on the subject.

*Infant Vaccination.*—In an answer to Dr. Watts, Mr. Chamberlain said the total number of births registered in England and Wales during 1925 was 710,582, but the vaccination returns in regard to the children born in that year were not yet complete. Returns to hand related to a total of 708,500 children, and of these 37,728 died unvaccinated. Certificates of successful vaccination were furnished in respect of 313,450 children, and declarations of conscientious objection to vaccination in respect of 291,347 children. As regards the remaining 65,975 children, no such certificates or declarations were furnished. He had no information on the number of prosecutions.

*Vaccination in Pensions Hospitals.*—On March 21st Lieut.-Colonel Stanley informed Mr. R. Morrison that in consequence of the recent severe outbreak of small-pox in Monmouthshire, it was deemed necessary by the medical advisers of the Ministry of Pensions to take all possible steps both to protect the patients in the Ministry of Pensions Hospital at Chepstow and to obviate the closing of this important institution, which served the needs of pensioners in Monmouthshire and South Wales. Closure would have been the only possible course in the event of an outbreak of this disease in the hospital. Instructions had been issued to the medical superintendent advising him that in the case of any patient whom he considered not already adequately protected against small-pox, revaccination should be secured if he considered it necessary and medically practicable. If a patient refused or was not, on medical grounds, suitable for vaccination, the case was to be dealt with either by the temporary provision of alternative treatment, by isolation, or by other means, compatible with the welfare of the patient, which would obviate contact with other patients in the institution. These instructions had been carried out with careful regard to the well-being of all the patients concerned, and had so far been effective. Mr. Morrison asked whether any of the ex-service patients who objected to being vaccinated had since taken their discharge from the hospital. Lieut.-Colonel Stanley replied that three had left. Their time was practically up and they would have been leaving in any case.

*Public-house Reform.*—A Public-house Improvement Bill to amend the law relating to the sale of excisable liquors was presented in the House of Commons on March 16th by Dr. Fremantle, supported by Sir Herbert Nield and others, and was read a first time. It provides for the issue of an improved public-house certificate for premises intended to be used as a house of general public refreshment, including food and beverages other than excisable liquors.

*Notes in Brief.*

The Foreign Secretary understands that the publication of the League of Nations report dealing with the traffic in dangerous drugs is merely postponed temporarily pending revision.

The Commissioners of Customs and Excise are giving special consideration to applications for the delivery from bond of wine to be used in the manufacture of medicated wines.

The Minister of Education is informed that the London County Council has asked its inspectors to see, on visiting schools, that a sufficiency of towels is provided for the children. The Council is not aware of any complaints of insufficient supply of towels.

# The Services.

## HONORARY PHYSICIAN TO THE KING.

LIEUT.-COLONEL AND BREVET COLONEL J. A. HARTIGAN, C.M.G., D.S.O., R.A.M.C., has been appointed Honorary Physician to the King, vice Major-General O. L. Robinson, C.B., C.M.G., late R.A.M.C., who has retired.

## ROYAL NAVY MEDICAL CLUB.

THE annual dinner of the Royal Navy Medical Club will take place at the Trocadero Restaurant, Piccadilly Circus, on Thursday, April 21st, at 7.30 for 8 p.m. Members who wish to be present are asked to inform the Honorary Secretary, Royal Navy Medical Club, Queen Anne's Chambers, Tothill Street, S.W.1, not later than seven clear days before that date.

## NAVAL MEDICAL COMPASSIONATE FUND.

A MEETING of the subscribers of the Naval Medical Compassionate Fund will be held at 11.30 a.m. on April 21st at the Medical Department of the Navy, Queen Anne's Chambers, Tothill Street, Westminster, S.W.1, to elect six directors of the Fund.

## DEATHS IN THE SERVICES.

Lieut.-Colonel William Richard Gore Hinds, R.A.M.C. (ret.), died on November 10th, 1926, aged 84. He was educated in the Queen's University, Ireland, where he graduated M.D. in 1863. Entering the army as assistant surgeon on March 31st, 1865, he became surgeon major, after twelve years' service, and retired with an honorary step as brigade surgeon in 1885. In the old regimental days he was with the Prince of Wales's Own West Yorkshire Regiment. He served in the Afghan war in 1878-80, when he took part in the defence of Kandahar, and received the medal.

Lieut.-Colonel Alexander Chalmers, I.M.S., has died of heart disease at Coimbatore, in the Madras Presidency, where he was civil surgeon, on October 27th. He was born at Ballarat, Victoria, on December 20th, 1872, and was educated at Aberdeen, where he graduated M.B. and Ch.B. in 1898. Subsequently he studied at Leipzig, and took the F.R.C.S.I. in 1909. He entered the I.M.S. as lieutenant on June 28th, 1900, and attained the rank of lieutenant-colonel on December 28th, 1919.

Surgeon Lieut.-Colonel William Patrick Smith, R.A.M.C. (ret.), died in London on January 3rd, aged 85. He was born on February 11th, 1841, and was educated in Dublin. He took the L.R.C.S.I. and L.K.Q.C.P. in 1862, and entered the army as assistant surgeon in September, 1863; he became surgeon major in April, 1876, and retired in October, 1888. As he had then over twenty years' service his title of rank was altered to surgeon lieutenant-colonel when the compound titles were introduced. In the old regimental days he served in the 35th Foot, now the 1st Battalion of the Royal Sussex Regiment.

Major Frank Stuart Tamplin, R.A.M.C., died at Chakrata on February 14th, aged 43. He was the only son of the late Dr. C. H. Tamplin, and was educated at St. George's Hospital, taking the M.R.C.S. and L.R.C.P. in 1910. After filling the posts of house-surgeon, house-physician, and ophthalmic house-surgeon at St. George's Hospital, he entered the army as lieutenant on July 28th, 1911, and became major after twelve years' service.

Major Robert James McCormack, R.A.M.C. (ret.), died on January 2nd, aged 69. He was born on February 14th, 1857, and was educated at Belfast, taking the degrees of M.D. and M.Ch. in the Queen's University, Ireland, in 1881. He entered the army as surgeon on August 2nd, 1884, became surgeon major after twelve years' service, the title being altered to major in 1898; he retired in August, 1903. He served in the South African war in 1899-1902, when he was for some time principal medical officer at Durban, and afterwards took part in the relief of Ladysmith, being mentioned in dispatches (1901) and receiving the Queen's medal with a clasp, and the King's medal with two clasps. When on the retired list he was employed at Omagh from 1905 to 1916.

# Medical News.

IN connexion with the Lister centenary celebrations in London a meeting will be held at King's College Hospital, Denmark Hill, on Monday, April 4th, at 3 p.m., when Sir Watson Cheyne, Bt., F.R.S., Sir Lenthal Cheatle, and seven others who served under Lord Lister will speak on his personality. Particulars of the reception of foreign delegates by the Prime Minister in the Great Hall of the British Medical Association, Tavistock Square, at 11.30 on Tuesday, April 5th, will be found at p. 579. Full details of the celebration in London are printed in a time-table published in the SUPPLEMENT (p. 104). The number of applications for tickets for the social evening of the Royal Society of Medicine on April 4th, when Sir StClair Thomson will give his recollections of Lister, has been so great that it has been found necessary to close the list and no further tickets can be issued.

DR. P. P. LAIDLAW, F.R.S., has revised the report of the Medical Research Council (No. 35) on the reaction of culture media, which was issued towards the end of 1919. Brief accounts are given of the principles involved in the determination of the hydrogen ion concentration, the preparation of standard solutions, and the adjustment of the reaction of media, with special reference to a colour comparator by the use of which greater accuracy is obtainable. The revised report (price 6d. net) is obtainable from H.M. Stationery Office or through any bookseller.

A MEETING in aid of the Society for the Provision of Birth Control Clinics will be held at 16, Grosvenor Street, W.1, on Wednesday, March 30th, at 5.30 p.m., under the chairmanship of Lord Dawson of Penn, G.C.V.O., M.D. Speakers: Mrs. Margaret Sanger (President of the American Birth Control League) and Mr. Harold Cox.

THE annual meeting of the Royal Medical Benevolent Fund will be held at 11, Chandos Street, Cavendish Square, W.C.1, on Friday, April 8th, at 5 p.m.

A COMBINED meeting of the Tuberculosis Society and the Society of Superintendents of Tuberculosis Institutions will be held at Oxford from April 7th to 9th. Professor Lyle Cummins will give an address on the bovine tubercle bacillus in immunization. A discussion of the defensive mechanism of the body against tuberculosis, from the physical and chemical, bacteriological, and immunological aspects, will be opened by Drs. Leonard Hill and John Freeman. Dr. A. G. Gibson will read a paper on the secondary infections in relation to the course of pulmonary tuberculosis, and Dr. A. D. Gardner will deal with the laboratory diagnosis. Dr. J Middleton Martin will detail gaps and flaws in the public health administration of tuberculosis. Visits will be arranged to the Wingfield Orthopaedic Hospital and the new Osler Pavilion. The annual meeting of the Tuberculosis Society will be held at Oxford on April 8th. Those who are not members of the two societies may attend as visitors, and further information may be obtained from the secretaries, Dr. F. J. C. Blackmore, the Tuberculosis Dispensary, Maxey Road, Plumstead, S.E.18, or Dr. J. R. Dingley, Darvell Hall Sanatorium, Robertsbridge, Sussex. Residential accommodation will be available at Somerville College, and those desiring to take advantage of this offer should notify the honorary secretaries not later than March 31st.

AT the meeting of the Harveian Society of London to be held in the Paddington Town Hall on Thursday, April 7th, at 8.30 p.m., a discussion on the treatment of Graves's disease will be opened by Mr. T. P. Dunhill, to be followed by Dr. C. M. Wilson and others.

PROFESSOR S. LYLE CUMMINS, C.B., C.M.G., will read a paper at the meeting of the North-Western Tuberculosis Society, to be held at the Public Health Laboratory, York Place, Oxford Road, Manchester, on Thursday, March 31st, at 3.15 p.m., on the bearing of recent laboratory research on clinical conceptions in tuberculosis. The meeting will be open to all medical practitioners, who are cordially invited.

DR. C. T. W. HIRSCH will lecture and give a demonstration for the Fellowship of Medicine on emergencies in anaesthetics at the Medical Society, 11, Chandos Street, W., on March 31st at 5 p.m. The same day, at 3 p.m., Mr. H. L. Attwater will give a clinical surgical demonstration at the All Saints' Hospital, Vauxhall Bridge Road, S.W. The lecture and demonstration are free to medical practitioners. From March 28th to April 9th the Queen's Hospital for Children will hold a special course. Also beginning on March 28th the Royal Eye Hospital staff will give a series of demonstrations during the afternoon for two weeks on diseases of the eye. The Fellowship of Medicine can arrange for practical courses in obstetrics and anaesthetics, and also for clinical assistantships in gynaecology; it provides also a general course of instruction at the associated hospitals. Copies of all syllabuses and of the *Post-Graduate Medical Journal* are obtainable from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE course will begin at the Cancer Institute of the Faculty of Medicine in Paris on May 16th, and will include lectures and a series of practical and clinical demonstrations on the nature, diagnosis, and treatment of malignant disease. Further details may be obtained from the Secretary of the Scientific Section of the Faculté de Médecine de Paris, 21, Rue de l'École de Médecine, Paris (VI^e^).

A NATIONAL Conference on Maternity and Infant Welfare will be held in the Great Hall of the British Medical Association, Tavistock Square, on July 5th, 6th, and 7th, under the presidency of the Minister of Health. The subjects to be discussed include atmospheric pollution in relation to maternity and child welfare, the provision of efficient sick nursing in the homes of children under school age, respiratory disease in relation to infant mortality, the provision of adequate accommodation for childbirth, the development of dental clinics for mothers and children under 5, the incidence of venereal disease in ante-natal and post-natal clinics, the results of artificial light treatment of children under school age, and the pasteurization of milk in relation to surgical tuberculosis. Lectures and film displays will be given in the evenings, and the travelling exhibition of the Central Council for Infant and Child Welfare will be on view each day. Visits will be paid to a number of maternity and child welfare institutions in London. It is stated that the Minister of Health will sanction the payment of the reasonable expenses of one delegate from any local authority or board of guardians, but that no grant under the Maternity and Child Welfare Regulations will be payable in respect of such expenditure.

IN connexion with the forthcoming Whitsuntide Congress at Ghent of the Royal Institute of Public Health there will be a section devoted to industrial hygiene, of which Lord Leverhulme is the president. Special discussions are to be held on industrial cancer, rheumatism, and temperature and humidity in industrial health. Medical practitioners wishing to participate in these discussions are invited to communicate with Dr. A. Vernon Davies, O.B.E., M.P., House of Commons, London, S.W.1.

COLONEL ROBERT J. BLACKHAM, C.B., C.M.G., late Honorary Surgeon to the Viceroy of India, has been appointed Commandant of the City of London Police Reserve.

IN accordance with the age limit of 68 fixed by the new federal constitution in Germany several professors in the medical faculties have recently resigned, including the physiologist Rubner, the internists F. Krauss and Goldscheider, and the medical jurist Strassmann.

THE Board of the London School of Hygiene and Tropical Medicine has combined the existing departments of entomology, helminthology, and protozoology in a division of medical zoology, under the directorship of Professor Leiper, F.R.S.

IT is announced that the Civil Service bonus for the six months dating from March 1st, 1927, will be calculated on the basis of a cost-of-living figure of 80 as against the figure of 70 for the past six months. This is a return to the level of March 1st, 1925.

THE late Dr. F. O. Stedman, formerly of Hong-Kong, who died at Weybridge in February last, has left estate of the gross value of £107,195 with net personality £101,000. He has bequeathed £500 to the Weybridge Cottage Hospital.

PROFESSOR EHLERS of Copenhagen has been made a Grand Officer of the Legion of Honour, and Professor David Giordano, senior surgeon to the Civil Hospital at Venice, has been nominated Grand Officer of the Crown of Belgium.

A DENIAL of the allegation that syphilis is caused by vaccination has been issued by the three Surgeon-Generals of the United States Army, Navy, and Public Health Service. It is stated that though 5,650,000 individuals have been vaccinated since 1917 by the Army and Navy, in no single instance has syphilis developed as a result, and none of the 2,918,000 vaccinated by the Public Health Service have contracted syphilis thereby. A similar immunity followed the vaccination of over 2,000,000 persons by local health authorities. In the United States the calf vaccine used is prepared only in licensed establishments under special regulations, which provide for repeated inspections of the laboratories and for proper safeguards as regards filling and labelling the tubes.

VACANCIES for two medical officers in the Sudan Medical Service are announced in our advertisement columns. The candidates, who must be single and under 30 years of age, must have held a resident appointment in a large general hospital. The pay commences at £E.720 a year, rising to £E.1,200 after thirteen years' service.

# Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the BRITISH MEDICAL JOURNAL alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the BRITISH MEDICAL JOURNAL must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the JOURNAL, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the BRITISH MEDICAL JOURNAL are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 4737 Dublin), and of the Scottish Office, 6, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 4361 Central).

## QUERIES AND ANSWERS.

### CHRONIC URTICARIA.

"A. F." writes: "Pruritus" should try small doses of thyroid, watching carefully the pulse. I had a similar case that went on for over a year, in spite of all treatment, including dieting, calcium, collosol manganese, etc. I noticed a very minor degree of hypothyroidism, and gave thyroid and iodine, with a very satisfactory result.

### MORBID SHYNESS IN A CHILD.

"K. H. G." writes: In reply to my letter in the JOURNAL of February 26th (p. 410) asking for suggestions as to the treatment of a case of morbid shyness in a child of 8, Dr. R. MacD. Ladell (March 19th, p. 551) states that to treat the cause of the shyness one must be aware of what is passing in the child's mind, and this can only be done by a process of psychological analysis. This hardly seems practicable to me in a case of this nature, where the presence of a stranger (even a strange girl of about her own age) causes her to run away, hiding her face with her hands—all entreaties being unavailing.

### INCOME TAX.

*Wife's Income: Letting of Unfurnished Rooms.*

"OVERTAXED" inquires whether his wife can claim repayment in respect of her separate income of £40, and whether he is liable to tax on receipts from letting unfurnished a portion of his own house.

*** (1) No claim can be made in respect of the wife's income; the income of husband and wife are aggregated, and presumably all personal allowances have been made from the husband's income. (2) Any liability to tax on the receipts from letting is covered by the assessment under Schedule A—sometimes referred to as the Property Tax—and the item need not be separately declared.

*Income from Irish Free State.*

"H. S.," who resides in England, understood that double taxation was done away with in 1926, but is informed that English tax will still have to be paid on the Irish property, although the income has already borne Irish tax.

*** The change made was in the direction of simplification, and it was certainly understood at the time that it would reduce the number of cases where both payments would have to be made. Assuming that the year in question is 1926-27, we suggest that "H. S." should ask the local collector to arrange for the English assessment to remain in abeyance until the Irish tax can be reclaimed and set against the English liability. A call at the office of the inspector of taxes might prove helpful.

## LETTERS, NOTES, ETC.

### THE NEWSPAPER REPORTER.

THE average newspaper reporter seems to be, in the strict etymological sense, incorrigible. In a report of an address to the Hammersmith Rotary Club a few days ago Sir Squire Sprigge was made to confuse the General Medical Council—a statutory body appointed in accordance with Acts of Parliament, and possessing, among other functions, certain penal powers with regard to registered members of the profession—with the Council of the British Medical Association—the executive of a purely voluntary body. He was also made to say that Britain was the only country where a man could not practise as a doctor unless he was on the *Register*. Of course, Sir Squire Sprigge never made any of these blunders, but they were passed by the editor of a news agency and published by a great London daily newspaper. If a reporter were to make blunders on the same scale about the Lincolnshire Handicap or Grand National, what would happen to him?

### COINCIDENT HERPES AND VARICELLA.

Two cases of the simultaneous occurrence of varicella and herpes zoster were reported in our columns on March 5th (p. 423), and an account of an another case is published by Dr. R. L. Thorold Grant in the *Medical Journal of Australia* for February 5th, 1927. A woman, aged 37, had had Hodgkin's disease for four years; it was kept in check by deep *x*-ray therapy, and signs of enlarging mediastinal glands had recently been treated in this way; shortly after the last irradiation a severe attack of herpes zoster along the course of the left sixth thoracic nerve began and was followed a few days later by an equally severe attack of herpes zoster along the course of the right seventh thoracic nerve; eventually the complete encirclement of the patient with a ring of herpes. At the height of the eruption she developed a profuse generalized varicella rash on the chest, back, abdomen, and scalp, with scattered vesicles on the extremities and face, and within the mouth. There was at that time in Adelaide a mild epidemic of chicken-pox, which the patient had not had in childhood.

### ENLARGED PROSTATE APPARENTLY CURED BY COLD WATER APPLICATIONS.

DR. J. CORBET FLETCHER (London) describes a case of reduction in size of an enlarged prostate following continued applications of cold water to the perineum. He states that four years ago a man, aged 58, consulted him for difficult and painful micturition, the urine being tinged with blood. In addition to a large prostate, a ring of external piles was present. For the bladder condition a mixture of potassium bicarbonate, hyoscyamus, and camphor water was prescribed, and the patient was advised to bathe the piles with cold water twice a day. Last month Dr. Fletcher re-examined him and found that the piles had disappeared and that the prostate had returned to the normal size and gave no trouble. The patient has now no bladder difficulty of any kind, and attributes the cure to the cold water applications. Dr. Fletcher adds that in a long medical career he has never encountered another case of enlarged prostate cured except by operation.

### CO POISONING.

DR. CHARLES W. CRAWSHAW (Ramsbottom) writes: In your issue of March 5th last Dr. Douglas J. A. Kerr, referring to the extreme toxicity of carbon monoxide, states that an individual breathing an atmosphere containing 1 per cent. of carbon monoxide will have 50 per cent. of carbon monoxide in his blood in fifteen or sixteen minutes. Thirteen years ago I received an urgent message to attend a fireman who had been taken suddenly ill whilst on his way to a fire. On my arrival at the warehouse to which he had been taken I found that he was dead. I was particularly impressed with the bright red colour of his lips and the pink tint of his skin. His fellow firemen informed me that he was apparently well when he took his accustomed place on the engine, but collapsed when about half a mile of the journey had been covered. The fire engine was a horse-drawn vehicle with a low chimney, and the deceased, whose seat was immediately behind the chimney, would be in a likely position to inhale the fumes. The *post-mortem* examination revealed no obvious cause of death, and at the inquest I stated, as my opinion, that death was due to carbon monoxide poisoning, basing this opinion on the rapidity of death and the *post-mortem* colour of the mucous membranes and skin. The interesting feature in the case was the fact that it was possible to inhale a poisonous dose of carbon monoxide in such circumstances — on a moving vehicle in the open air.

### A DISCLAIMER.

DR. ALEXANDER BRYCE (Birmingham) desires to disclaim all responsibility in connexion with a paragraph—misleading in substance—which appeared in the London *Daily Mail* of March 19th, referring to his article on "Anaphylaxis and ultra-violet light treatment" in the BRITISH MEDICAL JOURNAL for that date.

### VISUAL IMAGERY: CORRECTION.

PROFESSOR T. H. PEAR asks us to correct a technical term in the report of his lecture on visual imagery published in the JOURNAL of March 12th (p. 471). In line 13 of column 2 for "ideatic" read "eidetic."

### VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 39, 40, 41, 44, and 45, of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *103*.

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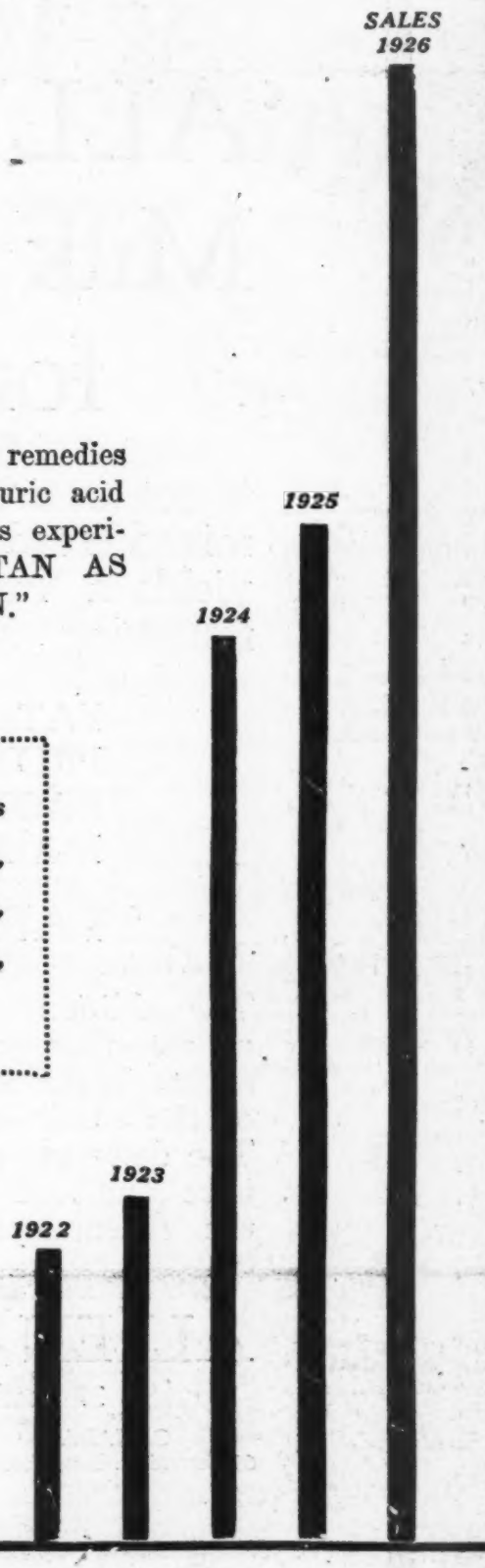


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